

RICE UNIVERSITY

# Implementation of Economic Sanctions

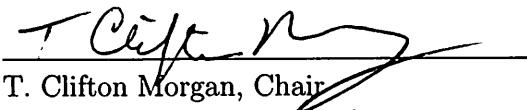
by

Yoshiharu Kobayashi

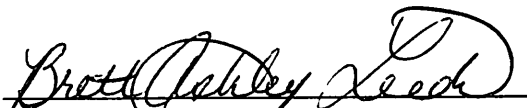
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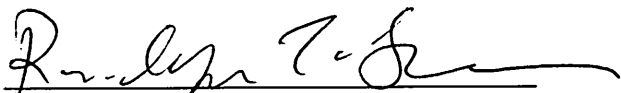
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## ABSTRACT

### Implementation of Economic Sanctions

by

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This dissertation investigates implementation problems in economic sanctions and how a state's concerns about policy implementation affect its decisions and the outcomes of sanctions. This study builds on the premise that sanctions are carried out by firms within a sanctioning state, not the state itself. First, using a game-theoretical model, I show that firms' non-compliance with sanction policies not only undermines the effectiveness of unilateral sanctions, but also has a counter-intuitive effect on a sanctioning state's decision to impose sanctions. The model suggests that a state is more likely to impose sanctions when it anticipates firms' *non*-compliance. A number of empirical implications are derived from the model and corroborated with data. Second, this study also investigates a sanctioning state's decision to sanction multilaterally or unilaterally, and how its expectations about the enforcement of sanctions influence this decision. When the enforcement of unilateral sanctions is expected to be difficult, the state is more likely to sanction multilaterally, but only when it has enough resources and the bureaucratic capability to help other states enforce their sanctions. The empirical evidence also buttresses these theoretical results. This study highlights the importance of incorporating expectations about enforcement into a full understanding of the sanctions processes. The conclusion is that states' ability to influence firms' decisions at home as well as abroad is a crucial determinant of whether they impose, how they design, and the effectiveness of sanctions.

# Acknowledgments

I came to graduate school because I wanted to have a better idea about how the world around us works. Six years ago, I was completely lost. I am still lost, but now have a better understanding of the world. In this way, my graduate school was a success. There are three professors at Rice whose work, thoughts, and creativity, have shaped the way who I am and the way I think: Cliff Morgan, Ashley Leeds, and Randy Stevenson.

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# Chapter 1

## Introduction

In 1806, after his major defeat in the Battle of Trafalgar, Napoléon gave up on the idea of using his military to attack the British and instead decided to attack the British economy by using businessmen as his warriors. Using his political power, he introduced decrees known as the Continental System, which became one of the first instances of using economic sanctions as a foreign policy tool. By forcing all French allies to cease trade with Britain and coercing any countries that wished to remain neutral in the war to do the same, Napoléon aimed to create high unemployment and food shortages in Britain and eventually bring the region in line with the rest of his empire. Not all businessmen in the empire followed Napoléon's orders, however. Using a well-established smuggling network, some firms evaded the system and kept dealing with the British. Defection by firms severely weakened the Continental System even before Russia defected in 1810 (Fremont-Barnes & Fisher 2004).

This case is a striking example of one interesting aspect of economic sanctions: States are often incapable of carrying out sanction policies. Instead, the subnational economic actors, such as firms, hold the true key. States impose economic sanctions

to restrict economic and commercial relations with another state, but such international relations are in principal conducted by domestic actors. Thus, whether or not economic sanctions actually inflict economic harm on the target often depends on the actions and decisions by these domestic actors.

A governments' dependency on subnational actors in implementing sanction policies can be problematic for two reasons. First, these actors often do not share the same preferences as their governments'. While governments impose sanctions to achieve international objectives, firms make decisions on profit-based motives. Given the high stakes involved in trade, firms have every reason to use their economic and political resources to oppose sanction policies. They may do so through lobbying against proposed sanction policies to curtail their enactment. Alternatively, they could evade sanction policies through smuggling or simply ignoring such policies, thereby undermining the effectiveness of the sanctions, as demonstrated in the case of Napoléon's Continental System. Second, implementation of sanction policies is problematic because governments often lack full control over the activities of firms. These subnational actors are often independent of states, and unless governments own them, they could make decisions in direct opposition to governmental policies. These problems can become even more convoluted, as firms can often conceal illicit activities from the attention of the state.

This dissertation focuses on one solution to these fundamental problems that sanctioning governments can adopt. Sanctioning governments typically attempt to solve this problem by disincentivizing firms from continuing trade with sanctioned states. They often create specific laws that prohibit their firms from engaging in economic exchange with sanctioned countries (Morgan & Bapat 2003). Enforcement of these laws is a crucial aspect of this process. Unless these laws are strictly enforced, firms would have no incentive to stop trading and abide by sanction policies. Thus, to ensure compliance by firms, the sanctioning governments must monitor the behavior of the firms and punish violators.

Though enforcement is a difficult and costly process in most cases, some governments may not have to be concerned about their firms evading sanctions laws. For example, when state-owned firms conduct trade, conflicts of interest are less likely to arise. Moreover, enforcement of sanctions may be less challenging in some cases. For instance, when certain forms of trade are restricted to a small number of firms, it is easier for sanctioning governments and their agencies to monitor the behavior of the firms. Thus, enforcement of sanction policies is often difficult; but, the extent to which governments must be concerned about it may vary and depend on several factors.

Building on these insights, the aim of this project is to explore the implications

of sanction enforcement problems on the states' decisions to threaten, impose, and design sanctions. It will also consider how these enforcement problems relate to the effectiveness of sanctions. The dissertation achieves this aim in several steps. First, I will introduce a theoretical framework which incorporates enforcement of sanctions as part of sanction processes, with firms as a strategic actor. Using this model, I analyze how the behavior of firms affects states' decisions during sanctions episodes as well as the outcomes of economic sanctions. Second, I will derive a number of novel implications from the theory that I subject to empirical tests in later chapters. For example, the theory identifies how the government's enforcement capacity should relate to the impact of their sanctions on trade patterns, effectiveness of sanction threats, and sender's decisions to impose sanctions. Third, I conduct a series of empirical tests to determine whether data support these observable implications from the theory. Fourth, I synthesize the theoretical insights and empirical findings from previous chapters to analyze how states design sanctions.

The next section will review the literature on economic sanctions. In reviewing such literature, I aim to clarify how this study builds on prior work and how it fills gaps left by others.

## 1.1 Existing Knowledge and Challenges

In recent decades, states have employed economic sanctions with increasing frequency to achieve a variety of foreign policy goals, and the projections of the number of economic sanctions show strong growth for the future (Elliott & Hufbauer 1999, Heinrich & Morgan 2008). The trends have been stark. According to the most comprehensive study, the number of economic sanctions has more than doubled every decade between 1971 and 2000 (Morgan, Bapat & Krustev 2009). While they traditionally seem a cheap substitute for the use of force, recent history has also demonstrated that the use of economic sanctions can come at tremendous economic and human cost. For one, sanctions can impose significant harm on the sender state itself. When the United States imposed the embargo on grain and superphosphoric acid against the Soviet Union in 1980, it created \$150 million loss for producers of superphosphoric acid and at least \$600 million in losses for producers of farm goods (Hufbauer, Schott & Elliott 1990). Though these numbers are negligible in terms of the U.S. GNP as a whole, it inflicted significant loss for producers in specific sectors of the U.S. economy. Another important aspect of economic sanctions, which has received much attention from a wide range of audiences in the international community, is that they can produce severe humanitarian consequences in targeted states (Peksen 2009, Peksen & Drury 2009, Drury & Peksen N.d., Wood 2008, Allen & Lektzian 2013). For ex-

ample, when the Organization of American States (OAS) imposed trade sanctions in response to a military coup in Haiti in 1991, these trade restrictions reportedly created food shortages and a significant rise in mortality rates. Reports show that mortality for children between one and four years of age increased 64 percent from 1991 to 1992 (Weiss 1997).

Given the increased use of sanctions as instruments of foreign policy and the potential costs that they have on both sanctioning and sanctioned states, it is important to know the extent to which sanctions can succeed in changing the objectionable behavior of target states and the conditions under which they succeed. Indeed, most of the existing studies on economic sanctions have investigated these questions. Early studies of economic sanctions examined high-profile cases such as the Cuban sanctions and argued that economic sanctions were seldom effective in coercing the target states to change their policies (e.g. Schreiber 1973, Baer 1973). A large-N study by Hufbauer, Schott & Elliott (1990) reports that sanctions do often fail to alter the behavior of target states, but also points out that sanctions can be successful in a sizable minority of the cases. Based on this finding, scholars, including Hufbauer, Schott & Elliott (1990), have devoted a considerable amount of effort to identify the conditions under which sanctions succeed in achieving international objectives (van Bergeijk 1989, Lam 1990, Dashti-Gibson, Davis &

Radcliff 1997, Bonetti 1998, Drury 1998, Drezner 1999, Allen 2005, Hufbauer, Schott, Elliott & Oegg 2007, Ang & Peksen 2007, Krustev 2010, Early 2011)

A common, general theoretical perspective unites most existing work and knowledge in the literature on this topic: namely, standard analysis of economic sanctions in the bargaining framework. From this perspective, sanctions are conceptualized as a policy instrument that makes disagreement on a disputed policy issue costly, which allows the sanctioning state to extract a better deal from the sanctioned state when an agreement is reached. This perspective has been useful in identifying factors that determine the effectiveness of sanctions. The bargaining perspective suggests that the most basic and important is the costs of sanctions (disagreement costs) to the target: The higher the costs are, the more likely it is that sanctions succeed. This basic insight led scholars to examine a number of factors that influence sanction costs as well as those that determine the target's vulnerability to them. For example, some suggested that the key variable determining sanctions success is whether they are imposed unilaterally or by a multilateral coalition (Martin 1993, Miers & Morgan 2002, Bapat & Morgan 2009), as multiple senders should be able to create more severe economic harm to the target than one sender could. In a similar vein, some argue that "sanction-busting" by third-party states undermines the effectiveness of sanctions, as it offsets the costs of sanctions



(Hufbauer et al. 2007, Early 2011, Lektzian & Biglaiser 2013). Others have also suggested that democratic targets or states that are suffering internal turmoil are particularly susceptible to sanctions (Bolks & Al-Sowayel 2000, Brooks 2002, Lektzian & Souva 2007, Allen 2008).

While a number of possible determinants of sanctions effectiveness have been identified, empirical evidence does not corroborate these hypotheses. For most of these factors, existing studies provide mixed empirical evidence. Consistent with this, a recent study by Bapat, Heinrich, Kobayashi & Morgan (2013) demonstrates that most of these factors are not robustly related to the success of sanctions. The best example of this is the long-running debate over whether multilateral sanctions are more effective than unilateral ones. While there is a widespread belief among policymakers that multilateral support is necessary to coerce other states to change their policy behavior, early work interestingly demonstrated that unilateral sanctions are more effective than multilateral ones (Lam 1990, Bonetti 1998, Dehejia & Wood 1992, van Bergeijk 1994, Hufbauer, Schott & Elliott 1990, Kaempfer & Lowenberg 1999). Although some evidence is put forth to suggest that multilateral sanctions may be actually more effective than unilateral sanctions (Bapat & Morgan 2009, Morgan, Bapat & Krustev 2009, McLean & Whang 2010), it still has not been overwhelming enough to settle this debate.

This disagreement between theoretical expectations and empirics suggests that approaching the effectiveness question from the traditional bargaining perspective may no longer be productive. Indeed, we can find some new approaches proposed in the literature. One promising approach taken by recent work is to delve much deeper into the domestic politics behind the working of economic sanctions as well as decision-making processes through which sanction policies are made, designed, and implemented (Morgan & Bapat 2003, Whang 2011, Krustev & Morgan 2011, McLean & Whang 2012, Lektzian & Patterson 2012). These theories pay particular attention to the roles that subnational actors, such as the public, firms, and interest groups, play in the context of economic coercion. For example, Whang (2011) and McLean & Whang (2012) view sanctions as a policy instrument that a sender government uses to satisfy its domestic constituent groups. More specifically, McLean & Whang (2012) argue that sanction policies are designed in a way that satisfies both the general public and special interest groups. When the public pressures policy makers to impose sanctions, they design sanctions that minimizes economic losses to the special interest groups. For example, policy makers are more likely to pursue non-trade restrictions, such as aid sanctions, when the size of export sector increases.

Another theoretical perspective introduced by Bapat & Morgan (2003) addresses a unique aspect of sanction episodes that has received much less attention from

the literature. They point out that the sender government cannot simply choose to sanction another state and guarantee imposing economic harm. They argue that this is because domestic economic actors—whose preferences run contrary to that of the government—often carry out sanction policies. Since the domestic firms are profit-maximizers, they will continue economic transactions with the target if violation of sanctions promises to yield positive benefits. In order to deter its domestic firms from continuing economic exchange with the target, the sender government adopts sanction policies that disincentivize firms from sanction-busting. Morgan & Bapat (2003) model this interaction as a game between the sender government that is trying to influence the policy of the target state through economic sanctions and the domestic firms within that sender state. The implication from their analysis is that the effectiveness enforcement of economic sanctions should depend on the sender governments ability to induce its domestic economic actors to comply with its sanction policy.

These new theoretical perspectives look promising from a scientific point of view. First, these theoretical lenses have allowed scholars to identify and analyze previously unstudied facets of the economic sanction dynamic, such as the design and enforcement of economic sanctions. For example, the theory proposed by McLean & Whang (2012) links domestic factors to sanction designs, which has not been

examined from the traditional bargaining perspective. Similarly, the theoretical perspective introduced by Morgan & Bapat (2003) hypothesizes that firms behavior should be systematically related to sender's characteristics such as the level of punishment specified in its sanctions laws. In the sanctions literature, which has almost exclusively examined the question of sanctions effectiveness, these new theories have provided fresh insights and results for the scholarship on economic sanctions.

Second, the explicit formulation of these theories allows for the derivation of a number of testable implications. Past studies have already proposed several novel hypotheses, a few of which have been evaluated against data by McLean & Whang (2012). What is appealing about these theories is the rigor in them, which allows one to take these models and derive more implications to evaluate. Even more importantly, the rigor in these theories makes it easy for future work to build on insights generated from them.

While the recent development in the literature appears promising, it falls short in two respects. First, many of their implications remain untested against data. The difficulty in testing these lies in the fact that data at the subnational actor level are not easily accessible. For example, Morgan & Bapat (2003) hypothesizes about the behavior of firms, but directly testing such hypotheses requires micro data at the firm level, which are not easily obtainable. Second, existing studies have not sufficiently

explored how domestic processes behind sanction policies relate to the outcomes of sanctions. In other words, these theories shed new light on domestic concerns that sanctioning governments have, but they fail to address how these domestic concerns may be shaped by and give shape to the international interactions between sanctioning and sanctioned states. Addressing this gap is important because the theoretical developments addressing domestic decision processes cannot be considered progressive until it can explain new domestic dynamics that were previously ignored as well as what previous models could explain.

There are two approaches to addressing the first problem. One is to collect the needed micro data so that direct tests are possible. Another way to address this problem is to extend the theories one step farther by exploring any additional testable implications in broader international contexts. In this study, I choose the latter approach not only because a collection of micro-data turned out to be more difficult than expected, but also because the latter is more conducive to addressing the second problem in the current literature. To explore how domestic processes influence international interactions between states and vice-versa, I incorporate new insights from domestic perspectives into a larger bargaining framework between sanctioning and sanctioned states. This way, it becomes clear whether a new theory with domestic processes subsumes existing knowledge. It also becomes clear how new knowledge

may differ from existing one.

Thus, the purpose of this project is to fill the gaps identified in the current literature. To this end, I will present a theoretical framework which incorporates firms and domestic enforcement of sanction policies within the strategic context between the sender and target. This way, I am able to analyze how firms and sanction enforcement impact sender and target's decisions in the process of sanctions. I derive a number of implications from this theoretical model, which I subject to data.

## **1.2 The Plan**

The underlying premise of this dissertation is that firms are the key actor. When governments impose sanctions, firms are the ones who are affected the most. In addition, they do not necessarily have to care about their government's foreign policy goals. They are motivated instead by profits. They are also strategic. That is, they consider what other firms do and what will happen to sanction policies in order to make decisions about their operations. For these reasons, to understand economic sanctions, one needs to examine the interactions between the governments and their firms and understand the costs and incentives the governments and firms face in the context of sanctions. By focusing on the actors who are arguably most affected by sanction policies, this dissertation uncovers the unique interactions between firms

and sender governments and explores the implications of this relationship in the strategic context between the sender and target.

The project proceeds in six chapters. Chapter 2 introduces a formal model to explore the effect of firms' strategic behavior and government's enforcement efforts on the use and outcome of economic sanctions. In accordance with most existing theories, the model views economic sanctions as a foreign policy to resolve conflict between the sender and target, but unlike the previous models it also views sanctions as a domestic policy whose aim is to deter firms from evading sanctions. The central result from the model is that the government's capability to enforce sanction policies is the key to explaining the variations in the impact of sanctions on sender-target trade, sanctioning government's decision to impose sanctions as well as outcomes of sanctions. The model predicts that threats of sanctions are more likely to succeed when the sender government has the ability to deter firms from evading sanctions. Concerning the government's decision to impose sanctions, the model produces some counter-intuitive predictions. That is, the sender government is more likely to impose sanctions when enforcement is expected to fail (i.e. firms are expected to evade sanctions and continue trading). This is because, knowing that imposed sanctions are to fail, the sender government is only willing to impose sanctions when it knows its trade relationship with the target will result in no negative economic impacts.

In Chapters 3 and 4, I test some of the implications from the model against data. More specifically, in Chapter 3, I test the model's predictions about the impact of sanctions on sender-target trade. Using data on bilateral trade and sanctions between 1985-2000, the chapter presents two sets of evidence in support of the theoretical model. First, when a state with an effective bureaucracy imposes a sanction, it reduces sender-target trade more rigorously than when a state with an ineffective bureaucracy does the same. Second, when a sender owns a large share of its domestic firms, a sanction affects the sender-target trade more than when the sender owns fewer firms. These findings are crucial because they show that firms' behavior and their considerations have an important influence on the implementation of sanction policies.

In Chapter 4, key predictions from the theoretical model are tested. Using the Threat and Imposition of Economic Sanctions or TIES data set, I test the relationships between the sender's ability to enforce sanctions and the various outcomes of sanctions. The chapter reports three sets of empirical evidence. First, I find that the threat of sanctions has a higher likelihood of success when the sender is capable of domestic enforcement. Second, empirical evidence demonstrates that imposed sanctions are also more successful when the sender is capable of enforcing sanctions. Third, the chapter provides support for the counter-intuitive claim that the sender



with the ability to enforce sanctions is less likely to impose sanctions than the one without it. These results support the key theoretical results that the behavior of firms and their strategic considerations systematically affect the states' decisions in the sanctions episodes.

Chapter 5 builds on the insights and findings from the previous chapters and examines a question completely overlooked in the literature: Under what conditions do states choose to pursue multilateral sanctions? Enforcement of multilateral sanctions often becomes a controversial political issue among members in a coalition. I posit that whether or not enforcement of multilateral sanctions become effective depends largely on the primary senders ability to enforce sanctions overseas. Thus, when primary senders have the ability to enforce sanctions overseas, they are more likely to pursue multilateral sanctions, but they do so when the expectations of enforcement of unilateral sanctions are low. I test this implication using the TIES dataset and find preliminary support.

Finally, Chapter 6 reviews the central arguments and findings of this study and suggests implications for both scholars and policy makers. The chapter shows how this project has helped shed light on some of the puzzles in the literature and also indicate which questions deserve further attention by scholars. For policy makers, I elucidate how the findings in this project may translate into concrete advice

and which issues await further examination. This dissertation highlights the unique problem the sender government faces in implementing sanctions and shows how governments abilities to control their own firms at home as well as firms abroad crucially determine the outcomes of sanctions.

## Chapter 2

### Theory: Firms, Domestic Enforcement, and Economic Sanctions

#### 2.1 Introduction

In order to understand how domestic enforcement of sanction policies shapes international interactions between states, I construct a game-theoretic model of economic sanctions, which includes firms as a strategic actor along with sender and target states. By including enforcement as part of sanction episodes, this model combines two perspectives on economic sanctions. The first perspective views sanctions as an activity between states through a lens of bargaining theory. The second perspective treats sanctions as domestic policies to deter firms from trading with the target state. Combining these two, the model specifies how the behavior of firms affects the incentives and constraints faced by states in an international strategic environment.

In the following sections, I first describe the role of firms and the enforcement problems faced by sanctioning governments. Then, I present a game-theoretic model in which the enforcement problem is included. I solve the game and use the equilib-

rium results to derive a set of testable empirical hypotheses.

## **2.2 Firms and Enforcement Problem**

To make sanctions work, the sender has to impose severe economic costs on the target (e.g. Morgan & Schwebach 1997, Drury 1998). Generating costs through economic sanctions involves more than an announcement of imposing sanctions on the part of the sender. After deciding to impose sanctions, sender governments must choose the designs of sanctions. They must decide how extensive sanctions will be (e.g. comprehensive vs. partial economic embargo), as well as exactly which groups of individuals, sectors, and goods are to be the primary targets for sanctions. After choosing the designs of sanctions, the sender government must then implement sanctions.

After deciding whether to impose sanctions and what types of sanctions to impose, the sender government typically creates laws that prohibit its domestic firms from engaging in economic transactions with the target state. These sanctions laws threaten any individual or corporation with civil or criminal prosecution if they are found to have engaged in economic transactions with the target against the sanctions laws. For example, the International Emergency Economic Powers Act (IEEPA), codified at 50 U.S.C s. 1701, gives the President the ability to impose economic sanctions

when he declares (by Executive Order) that there is an “unusual and extraordinary threat” to the United States. The IEEPA has been used to sanction Iraq, Syria, Algeria, Libya, Panama, Colombia, among other nations to date. On October 21, 1995, President Clinton used the authority given him by the IEEPA to sign President Directive Decision 42, an Executive Order, invoking economic sanctions against certain Colombian individuals and companies involved in drug trafficking and money laundering. PDD 42 makes it illegal for any U.S. company or individual to trade directly or indirectly with the sanctioned entities. (Richards 1999, 144-145).

To enforce these laws, the sender government delegates its enforcement authority to its agencies. In the United States, two agencies, the Treasury’s Office of Foreign Assets of Control (OFAC) and the Commerce’s Bureau of Industry and Security (BIS), are primarily in charge of enforcing sanctions.<sup>1</sup> In most other countries, sanctions are implemented by their central banks, internal enforcement agencies (e.g. police department), etc. Their primary task is to monitor economic transactions between domestic entities and sanctioned international entities or states and punish those who violate these laws by charging them with fines, which in some cases can be up to one million dollars for a violation case in the United States.

Enforcing sanctions is particularly problematic and difficult for the sender gov-

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<sup>1</sup> Depending on the scope and type of sanctions, several other agencies like Department of Homeland Security and Department of Justice assist enforcement efforts in the United States.

ernment. There are several reasons for this. First, profit-maximizing firms who were in business with the target have a high incentive to continue doing business with the target. Second, even if some firms stop doing business with the target, this creates an opportunity for other individuals and firms to take advantage of the arbitrage rent. Third, in the complex global economy, firms can easily find ways to evade sanctions by transshipping goods through third countries, concealing the nation of origin (this is especially easy for commodities like oil and agricultural goods), and handling transactions through their foreign subsidiaries.

Policy makers often suggest two primary reasons for why these problems in sanctions enforcement are not adequately addressed: lack of resources and lack of support from foreign countries. Experts point out that enforcement agencies in many countries lack resources and technical capacity for sanctions enforcement (e.g. Mastanduno 1992). Even in the United States, given the number of sanctions programs, the resources devoted to these enforcement agencies is quite small (GAO 2007).

Lack of foreign support also complicates the agencies' task. One OFAC official laments that some countries "undermine the embargo [against Cuba] ... by refusing to ... allow their citizens to provide evidence or testify in embargo-related cases. These countries have not cooperated in efforts to block the export of U.S.-made

items to Cuba. U.S. officials reported that this lack of cooperation complicates agencies' embargo monitoring and investigatory work" (GAO 2007, 54). Lack of support from foreign governments is understandably prevalent because such support can hurt their own firms and reduce their economic activities. For example, the lack of foreign support was so problematic that the U.S. threatened to impose a secondary sanction on the U.A.E. for transshipping goods to Iran.<sup>2</sup>

Agencies can sometimes lessen these problems through cooperation with other domestic agencies such as the Department of Justice in the United States, which has significantly more resources and human assets. For illustrative purposes, consider the case of Aviation Services International (ASI), which was charged by OFAC for violating the Iranian Transactions Regulations. According to official documents published by OFAC, ASI exported U.S. origin aircraft parts, communication equipment, and polyimide film from the U.S. to Iran, via the Netherlands without licenses from OFAC.<sup>3</sup> What is striking about this case is that not only did OFAC and BIS get involved, but so did other agencies such as the DOJ and the Federal Bureau of Investigation (FBI). In fact, ASI previously pleaded guilty in the U.S. District Court of the District of Columbia to one case filed against them by the DOJ for violating

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<sup>2</sup> "UAE Surprised at U.S. Warning on Syria, Iran Trade," *Reuters*, 15 December 2006, <http://legacy.utsandiego.com/news/world/20061215-0731-uae-usa-warning.html>.

<sup>3</sup> Information was taken from documents produced by OFAC's website ([http://www.treasury.gov/resource-center/sanctions/OFAC-Enforcement/Documents/asi\\_agreement.pdf](http://www.treasury.gov/resource-center/sanctions/OFAC-Enforcement/Documents/asi_agreement.pdf)).

other regulations. When OFAC received the case, all the relevant information was available to them because of the previous case brought by the DOJ (DOJ 2009). According to a pre-penalty notice to ASI issued by OFAC, “Information was provided to OFAC by the DOJ and is described both in the Criminal Complaint filed by the DOJ against ASI et al. on August 29, 2007 and in the Criminal information filed by the DOJ against Robert Kiaaipoel, an officer of ASI” (1). This demonstrates that cooperation among agencies can occur and is quite helpful in addressing the enforcement problems. However, this sort of cooperation only seems to happen when other agencies investigate certain firms for violations of non-sanction related regulations and find information about sanctions violations. Other agencies have their own priorities, and they do not usually cooperate with sanction enforcement agencies on a regular basis.

Given the lack of enforcement capacity by government agencies, domestic firms often do not see a high risk in evading sanctions even in the United States. In fact, one document reports a widespread belief in the U.S. business community that OFAC does not enforce sanctions and that making efforts to abide by sanctions laws is wasteful and harmful to business.

The Commission heard in informal meetings with representative of more than one industry that, outside of the financial community, compli-



ance is voluntary because OFAC undertakes little, if any, investigation or policing. Counselors for certain businesses claimed that they have trouble justifying resources for compliance programs when competitors or other industries often freely ignore sanctions laws. Consequently, it is the responsible entities that self-police and voluntarily report violations which become subject to OFAC monitoring and enforcement (Judicial Review Commission 2001, 119).

Given firms' belief about the lack of law enforcement and high rewards for evading sanctions, it is not surprising that they often continue business with sanctioned targets. This enforcement problem is likely to be more severe in countries where agency officials are less professional or have less training and where resources for enforcement are limited. Without effective enforcement of sanctions, the sender government will not be able to impose serious economic costs on the target.

These insights about enforcement of sanctions cast doubts on the way scholars have studied economic sanctions. Traditionally, scholars implicitly assumed that impositions of sanctions led to a disruption of sender-target economic relationship. The discussion above suggests that sanctions do not always generate economic harm on the target and the extent to which they succeed in doing so depends on the actions taken by firms. Below, I present a game-theoretic model, which incorporates these

insights.

## 2.3 Model

Suppose that there are three players: a sender government ( $S$ ), a target government ( $T$ ), and a representative firm ( $A$ ).<sup>4,5</sup> I assume that the firm operates from within the sender's territory and trades with the target. Suppose that there is a political dispute between the sender and the target over some policy. The sender government decides whether to threaten the target with economic sanctions in order to coerce changes in the target's policy behavior. If the sender decides in favor of threatening sanctions, the target then decides whether to give in to the sender's sanctions pressure by shifting her policy. If the target does not give in, then the sender has another choice of whether to actually impose the sanctions. The economic sanctions have to be carried out by the firm. In the event that sanctions are imposed, the firm decides either to comply with its government's demand to cut trade or to continue its trade with the target.

Both the sender and target government care about the disputed policy and the trade relationship between them. If  $S$  successfully coerces a change in  $T$ 's policy,

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<sup>4</sup> There is typically more than one firm that engages in trade between two countries. However, for simplicity, the model assumes that these firms are the same and focuses on one representative firm.

<sup>5</sup> I refer to the sender as "he," the target as "she," and the firm as "it."

$S$  receives a payoff of 1, otherwise the payoff is 0. Similarly,  $T$  receives a payoff of 1 if she can maintain her status quo policy, and a payoff of 0 otherwise.  $S$  and  $T$  both receive a payoff of 0 if they can maintain their trade relationship; but, if it is disrupted, they each receive a payoff of  $-\kappa$  where  $\kappa > 0$ . In contrast, the firm primarily cares about its profit from trading with  $T$ . If  $A$  can continue making profit from trading, it receives  $\pi > 0$ , and 0 otherwise. I also allow for the possibility that the firm cares about the disputed policy by assuming that it receives  $\gamma \geq 0$  if  $S$  successfully coerces a change in  $T$ 's policy.

Sanctions impositions create a dilemma for the firm. When the sender imposes sanctions, he makes it illegal for the firm to continue trading with the target and punishes those who violate such laws.  $A$  has a choice between complying with the laws or violating sanctions at a cost. If  $A$  complies with sanctions laws, it loses all profit from trade with the target and receives a payoff of 0. If  $A$  does not comply and continues trading with  $T$ , it derives a profit of  $\pi$ , but pays the cost of evading the sanctions  $\phi > 0$  and risks a penalty with some probability. The parameter  $\phi$  represents possible cost associated with concealing trade from their governments, which should be different from the penalty. Let  $p$  denote the probability that the government finds the firm in violation. Furthermore, let us denote by  $\mu\pi$  the amount of the penalty the firm has to pay when it gets caught in violation where  $0 < \mu \leq 1$

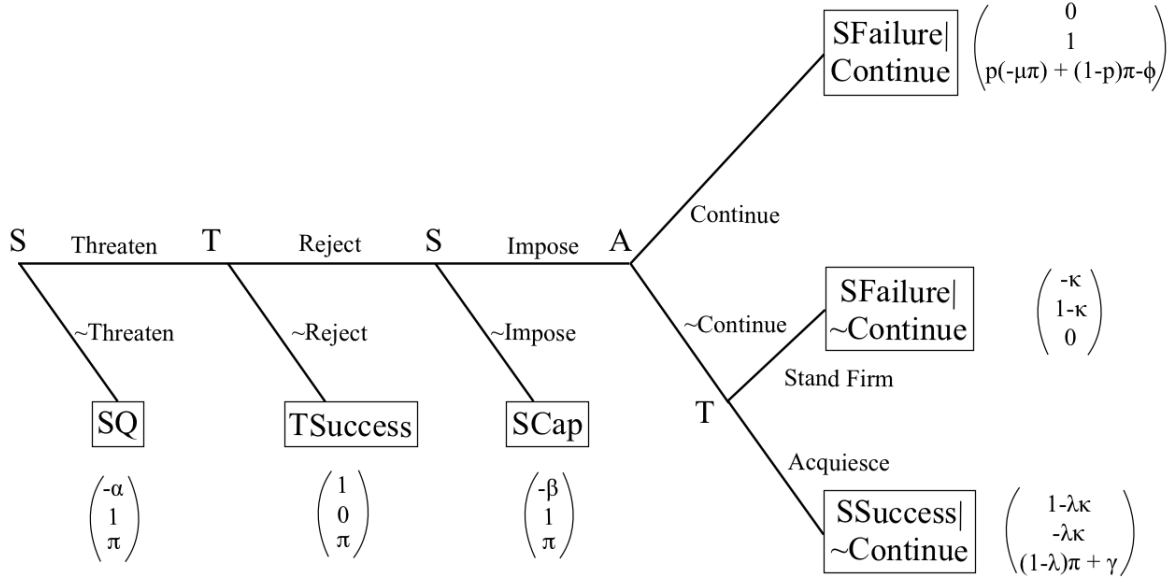


Figure 2.1 : Game Tree

represents the penalty as a proportion of its profit from trade. This game is illustrated in Figure 2.1. Below, I explain the game in more detail.

The game begins with a move by the sender, who decides whether to accept the status quo on a disputed issue, or to demand a shift in the target's policy in his favor. If he chooses to maintain the status quo (SQ), the game ends and the players realize the payoff triple of  $(-\alpha, 1, \pi)$  where  $0 \leq \alpha < 1$  and  $\pi > 0$ . The parameter  $\alpha$  represents some cost to the sender government for taking no action against the target's policy behavior. When the target violates some international rules, the

sender government often finds it difficult to condemn the behavior without taking any coercive measure as the public as well as the international community calls for severe punishment against the target.<sup>6</sup> When the sender does not make a demand, the target gets to keep its status quo policy and receives a payoff of 1. The firm maintains its trade with the target and receives a profit of  $\pi$ . If the sender makes a demand of policy change, the demand is accompanied by the threat of economic sanctions. Following the sender's decision to make a demand, the target can either accept the demand or reject it. If the target accepts it, the game ends with a threat success (TSuccess) and the players realize the payoff triple of  $(1, 0, \pi)$ , as the target's policy is shifted in the sender's favor and the firm's profit is not affected.

If the target rejects the demand, the sender has the option of either backing down or imposing sanctions. If the sender decides to back down, the game ends with a sender's capitulation (SCap) and leaves the status quo unchanged with the payoff of  $(-\beta, 1, \pi)$  where  $0 \leq \beta < 1$ . The parameter  $\beta$  represents the reputation cost that the sender government may incur. This reputation cost can be domestic as Tomz (2007) has shown that citizens dislike inconsistent foreign policies. Also, the cost can be international in that backing down from a threat can undermine the credibility of

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<sup>6</sup> For example, when the Korean aircraft was shot down by the Soviet Union in 1983, U.S. President Reagan quickly condemned the shooting, but was at first hesitant to threaten or impose sanctions. Before long, Reagan felt considerable pressure from Congress and the media and ended up imposing sanctions against the Soviets as a result (Miyagawa 1992).

future threats (Baldwin 1985, Peterson N.d.).<sup>7</sup> I assume that  $\beta$  can be greater than or less than  $\alpha$ .

If the sender chooses to carry out his threat and actually impose sanctions, the firm decides whether to comply with the sanctions and stop trading with the target or violate sanctions and continue trading. If the firm does not comply with the sanctions and trades with the target, I assume that the game ends with a sanctions failure (SFailure|Continue) and the players realize the payoff triple of  $(0, 1, p(-\mu\pi) + (1-p)\pi - \phi)$  where  $0 \leq p \leq 1$ ,  $\mu \in (0, 1]$ , and  $\phi \geq 0$ .<sup>8</sup> The parameter  $p$  represents the probability of the firm getting caught in violation and being forced to pay  $\mu\pi$ . The term  $\phi$  is the cost of evading sanctions, such as bribing public officials or extra costs to transship goods through different ports. The sender's payoff is 0 because the target's policy is unchanged and firms from the sender continue to trade. The target keeps her status quo policy and continues enjoying trade with the firm; thus, her payoff is 1.

If the firm complies with the sanctions and discontinues trading with the target, the target has the option of standing firm against the sanctions or acquiescing. If the target stands firm, the game ends with a sanctions failure (SFailure| ~Continue)

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<sup>7</sup> A recent study by Peterson (2012) provides empirical evidence suggesting that the target of a sanction threat is less likely to acquiesce to the demand when the United States recently backed down from a threat.

<sup>8</sup> Here,  $T$ 's choice of whether to stand firm or acquiesce is omitted because standing firm is strictly dominant over acquiescing if the firm continues trading.

and the players realize the payoff triple of  $(-\kappa, 1 - \kappa, 0)$ . Because the sanctions fail to coerce a change in  $T$ 's policy, the sender receives 0 for the policy outcome while the target receives 1. However, both the sender and target suffer from a loss in trade  $(-\kappa)$ . As the firm discontinues trading with the target, it loses profit and receives a payoff of 0. If the firm stops trading with the target and the target acquiesces, the game ends with a sanctions success ( $\text{SSuccess} \mid \sim \text{Continue}$ ) and leaves the players with the payoff triple of  $(1 - \lambda\kappa, -\lambda\kappa, (1 - \lambda)\pi + \gamma)$  where  $\lambda \in (0, 1)$  and  $\gamma \geq 0$ .<sup>9</sup> The parameter  $\lambda$  represents some small portion of the trade that is lost due to the partial imposition of sanctions. The firm receives a payoff of  $(1 - \lambda)\pi + \gamma$  because the firm loses some portion of its profit while the sanctions are imposed, but is able to resume trade with the target once sanctions are lifted.

In this model, we assume that the firm knows all aspects of the game, but the sender and the target are uncertain about the firm's cost of evasion,  $\phi$ . Specifically,  $S$  and  $T$  have a common belief distribution  $f(\cdot)$  over some space  $[\underline{\phi}, \bar{\phi}]$  with a cumulative distribution function,  $F(\cdot)$ . This assumption is reasonable given the illegal nature of the firm's operations and the difficulty in obtaining information regarding the cost of such illicit activities.

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<sup>9</sup> I could write the firm's utility function as  $\tilde{\gamma}(1 - \lambda\kappa) + (1 - \tilde{\gamma})$  where  $\tilde{\gamma}$  is the weight the firm attaches to its profit and  $(1 - \tilde{\gamma})$  is the weight attached to the outcome on disputed policy. My formulation is equivalent to this with  $\gamma = \frac{1 - \tilde{\gamma}}{\tilde{\gamma}}$ , provided that  $\tilde{\gamma} > 0$ .

Since the model is a game of incomplete information, I solve the game for its perfect Bayesian equilibrium (PBE). The equilibrium results are summarized in a proposition in Appendix. Three main implications are derived from the proposition and presented in the next section.

## 2.4 Equilibrium Analysis

In this section, I present the equilibrium results. Though the model produces a number of implications, I focus on three main results derived from the model. The basic insight in all three results is that firms' behavior crucially affects the sender's and target's decisions at each stage of the game and thus influences the sanctions outcomes.

First, I analyze the behavior of the target if sanctions are imposed. The target will stand firm if the firm does not comply with the sanctions laws and continues trading with her. However, if the firm complies with the sanctions, the target's behavior depends on how valuable the trading relationship with the sender is compared to the disputed policy. When the firm stops trading under the sanctions, the target will acquiesce if  $1 - \kappa \leq -\lambda\kappa \Leftrightarrow \frac{1}{1-\lambda} \leq \kappa$  and stand firm if  $\frac{1}{1-\lambda} < \kappa$ . This suggests that if the target does not value the trade relationship with the sender, the target stands firm no matter what the firm does. That is, sanctions never succeed. I call



this case the “Low Trade Dependence Case.” On the other hand, when the target values the trading relationship, the target acquiesces if the firm actually complies with the sanctions laws and stops trading. I call this second case the “High Trade Dependence Case.”

What is not clear here is whether the sender would ever impose sanctions when he is pessimistic about the firm’s compliance or when he knows that the target would stand firm regardless of the firm’s decision. If the sender never imposes sanctions unless he is optimistic that the firm will comply, then most of the observed instances of sanctions should succeed, which is inconsistent with most of the views and empirical results present in the literature. In fact, the model suggests that the sender will impose sanctions that he knows are likely to fail, and he will sometimes do so even if the sender knows for sure they will fail. To see this, consider the sender’s decision to impose sanctions in the “High Trade Dependence Case.”

In the “High Trade Dependence Case,” where the target conditions her decision on the firm’s reaction to sanctions, it turns out that the sender always chooses to impose sanctions. The logic of this result is the following. If the sender government is optimistic that his firm will comply with the sanctions laws, then he imposes sanctions because the target is likely to change her policy. In cases where the sender government believes that his firm will evade sanctions, the sender is still willing to

impose sanctions because he is likely to suffer no loss in trade with the target and he can avoid incurring the reputation cost of backing down.

Now that we know the sender imposes sanctions in the “High Trade Dependence Case,” we will consider when the target will reject the sender’s demand. The target’s decision here depends on her beliefs about the probability that the firm will violate sanctions. If she is optimistic that the firm will evade the sanctions and continue trading with the target, she will reject the sender’s demand. If she is pessimistic that trade will continue, she will accept the demand. Regardless of the target’s decision to accept or reject the demand, the sender will threaten to impose sanctions for the same reason he imposes sanctions regardless of the target’s decisions. If the target will accept the demand, the sender makes the demand because the threat will successfully lead to a change in the target’s policy. If the target will reject the demand, the sender still makes the demand because he will suffer no loss in trade and avoid incurring the reputation cost of backing down. This discussion leads to Result 1:

**Result 1:** Given that the sender makes a demand, a threat of sanctions is more likely to succeed if the trading relationship is sufficiently valuable to the target and the target is pessimistic that the firm will violate sanctions and continue trading with her.

It is worth pointing out the novelty of this result. It suggests that trade dependence is not sufficient for threats to succeed. Traditionally, scholars have often focused on trade linkages or trade dependence and identified it as the key factor in predicting the sanctions effectiveness (e.g. van Bergeijk 1994, Bonetti 1998). The model here suggests that such trade linkages or dependence is necessary but not sufficient for the target to acquiesce because the firm may or may not actually cut trade with the target. Thus, in addition to trade dependence, the target's belief about firm's compliance with sanctions is also necessary for the target to give in to the demand by the sender.

Next, we shall discuss what the players do in the “Low Trade Dependence Case.” We already know that the target stands firm regardless of the firm's action either because the value of economic exchange with  $S$  ( $\kappa$ ) is too small compared to the value of the policy or because  $\lambda$  is too large (no incentive to acquiesce). In this case, the sender's decision to carry out his threat is more involved than what we saw in the “High Trade Dependence Case.” Here, impositions of sanctions would not make sense if the sender only cared about the policy outcome because such a decision would bring no policy benefit and also because he would lose trade with the target. However, if the leader expects to suffer reputation costs for not carrying out his threats, then the imposition of the sanctions can be a rational choice under

certain conditions. The sender's decision is based on the comparison between the expected loss in trade from imposing sanctions and the reputation cost of backing down. Thus, given the reputation cost, the sender is more likely to impose sanctions *when he believes that his firm is likely to evade sanction policies*. This is because the sender can protect his reputation without losing trade if the firm ignores sanction policies. This leads to a counterintuitive result:

**Result 2:** Given that threats fail, the sender is more likely to impose sanctions if the reputation cost of backing down is sufficiently high and he believes that the firm will violate the sanctions and continue trading with the target.

Now, consider the conditions under which imposed sanctions are likely to succeed. The model suggests that imposed sanctions can be successful only when the firm decides to stop trading with the target. However, this is the case only when the target values the economic relationship with the sender ("High Trade Dependence Case"). When the target does not ("Low Trade Dependence Case"), the model suggests that imposed sanctions can never succeed because the value of the sender-target trade is so low that the target would rather lose trade with the sender than shift her current position on the disputed policy. This leads to the third result of the model:

**Result 3:** Given that they are imposed, sanctions are more likely to succeed if the

firm complies with the sanctions.

## 2.5 Empirical Implications

In deriving empirical implications from the model, I first analyze the firm's decision, which will serve as a basis for derivations of additional hypotheses. I begin the discussion by the firm's decision in the "High Trade Dependence Case" where the trade relationship between the sender and the target is valuable to the target. In this case, the firm knows that the target would stand firm if it continued trading and that the target would acquiesce if it discontinued trading, it compares its payoffs associated with  $S_{Failure|Continue}$  and  $S_{Success| \sim Continue}$ . That is, the firm continues illicitly trading with the target if  $p(-\mu\pi) + (1-p)\pi - \phi + \gamma \geq (1-\lambda)\pi \Leftrightarrow \phi \leq \pi(\lambda - p(1+\mu)) + \gamma$  and discontinues trading if  $\phi > \pi(\lambda - p(1+\mu)) + \gamma$ . Intuitively, the firm is more likely to continue trading with the target as (1) the probability of getting caught decreases, (2) the penalty for getting caught becomes less severe, (3) the profit from trading with the target increases, (4) the cost of evading sanctions decreases, and (5) the firm cares less about the policy outcome.

Similarly, in the "Low Trade Dependence Case," the firm knows that the target will not yield to sanctions regardless of its decision, so the firm compares its payoffs associated with the following two outcomes:  $S_{Failure|Continue}$  and  $S_{Failure| \sim Continue}$ .

The firm will continue illicitly trading with the target if  $p(-\mu\pi) + (1-p)\pi - \phi \geq 0 \Leftrightarrow \phi \leq \pi(1 - p(1 + \mu))$ . This suggests that the firm is more likely to continue trading with the target as (1) the probability of getting caught decreases, (2) the penalty becomes less severe, (3) the profit from trading with the target increases, and (4) the cost of evading sanctions decreases.

Because most trade is conducted by firms, their decisions directly affect how sanctions impact trade. That is, all the factors that affect firms' decisions in the sanction context should affect how much impact sanctions have on the sender-target trade relationship. For example, if the penalty is severe, the sanction should have a large depressing effect on the sender-target trade relationship because firms are much less likely to evade the sanction policy. Thus, based on these theoretical results, the following hypotheses are drawn:

**Hypothesis 2.1.1** *A sanction has a negative impact on the sender-target trade.*

**Hypothesis 2.1.2** *This effect increases as the probability of the firms getting caught conducting illicit trade rises.*

**Hypothesis 2.1.3** *This effect increases as the penalty for violating the sanction rises.*

**Hypothesis 2.1.4** *This effect is larger as the amount of profit from doing business*

*with the target decreases.*

**Hypothesis 2.1.5** *This effect increases as evading the sanction gets costlier.*

**Hypothesis 2.1.6** *This effect is larger as the firms care more about the disputed policy.*

From Result 1, we know that threats of sanctions can be successful only when the trade relationship between the sender and the target is valuable to the target (“High Trade Dependence Case”). Moreover, the target accepts the demand at the threat stage when she is pessimistic that the firm will continue trading with her. This suggests that what is important for the likelihood of threat success are factors that affect the target’s belief about firms’ compliance with sanction policies. In the model, I assume that the sender and target know the components of the firm’s utility function except for the cost of evading sanctions. Thus, their belief about the firm’s compliance with the sanctions is a function of the variables that define the firm’s utility.

More formally, we can define  $\phi^*$  as a threshold value of  $\phi$  such that  $\phi^* = \pi(\lambda - p(1+\mu)) + \gamma$ . If the cost of evasion is lower than this threshold value  $\phi^*$ ,  $A$  will continue trading with  $T$ ; however, if the cost is higher than  $\phi^*$ ,  $A$  will discontinue trading. Since the sender and target do not know exactly what  $\phi$  is, their beliefs about the

probability that the firm will evade sanctions can be represented by  $F(\phi^*) = \Pr(\phi \leq \phi^*)$ .

While there are several factors  $(\pi, \lambda, p, \mu, \gamma)$  that influence the target's beliefs  $F(\phi^*)$ , I focus on two factors that will serve as a basis for the empirical analysis in the following chapters: the probability that the firm gets caught for its illicit trading with the target,  $p$ , and the extent to which the firm cares about the policy outcome,  $\gamma$ . First, as the probability that the firm gets caught for illicit trading increases, the firm is less likely to continue trading with the target due to the fear of punishment. In turn, an increase in this probability lowers the target's belief that the firm will continue trading with her. When the target believes that the firm is unlikely to continue trading with her, she accepts the demand before sanctions are imposed to avoid the likely loss of trade with the sender. Second, similarly to the case with  $p$ , as the firm cares more about the outcome on the disputed policy, the firm is more likely to discontinue trade with the target, which increases the likelihood that the target will accept the demand. This discussion leads to the following hypotheses:

**Hypothesis 2.2.1** *Threats of sanctions are more likely to succeed as the probability that firms get caught for illicit trading increases.*

**Hypothesis 2.2.2** *Threats of sanctions are more likely to succeed as firms care more about the policy outcomes.*



**Hypothesis 2.2.3** *Threats of sanctions are more likely to succeed as the target values trade with the sender more.*

Next, consider the conditions under which the sender imposes sanctions. From Result 2, we know that the sender backs off from his threat in cases in which the target does not sufficiently value the economic relationship with the sender (“Low Trade Dependence Case”). In addition, the sender is more likely to impose sanctions *when he expects his firms’ non-compliance*. Again, what is crucial for the sender’s decision to impose sanctions is his belief about the firm’s response to imposed sanctions. In the “Low Trade Dependence Case,” the firm will continue illicitly trading with the target if  $p(-\mu\pi) + (1-p)\pi - \phi \geq 0 \Leftrightarrow \phi \leq \pi(1-p(1+\mu))$ . Let us define  $\phi^{**}$  as another threshold value of  $\phi$  such that  $\phi^{**} = \pi(1-p(1+\mu))$ . Then, the sender and target’s beliefs about firms’ non-compliance can be expressed by  $F(\phi^{**}) = \Pr(\phi \leq \phi^{**})$ .

Here, I focus on one observable factor that influences the sender’s belief about the firm’s compliance behavior: the likelihood that the firm gets caught for illicit trading,  $p$ . As the probability that the firm gets caught for illicit trading decreases, the sender’s belief that they will violate sanctions becomes stronger. Thus, the sender is more likely to impose sanctions as the likelihood that the firm gets caught decreases.

Furthermore, Result 2 suggests that (expected) reputation cost for the sender

is an important factor in determining his decision. The sender government faces reputation costs for backing down, suggesting that higher reputation costs should increase the chances that the sender will impose sanctions. In addition, when the sender government expects to incur the reputation cost of backing down, he faces a difficult choice of whether or not to impose the sanction. This is when he takes into account the firms' behavior, suggesting that the effects of the probability of firms getting caught for illicit trade should be conditional on whether the sender anticipates paying reputation costs for backing down. This leads to the following four hypotheses:

**Hypothesis 2.3.1** *Sanctions are more likely to be imposed as the probability that firms get caught for illicit trading decreases.*

**Hypothesis 2.3.2** *These effects should increase when the sender government's reputational cost from backing down becomes more severe.*

**Hypothesis 2.3.3** *Sanctions are more likely to be imposed when the sender government's reputational cost from backing down becomes more severe.*

**Hypothesis 2.3.4** *Sanctions are more likely to be imposed as the target values trade with the sender less.*

Now, consider the conditions under which imposed sanctions are likely to succeed.

From the discussion of Result 3, we know that imposed sanctions can be successful only in the “High Trade Dependence Case.” Thus, to determine the relationship between some observable variables and the success of imposed sanctions, I will focus on firms’ behavior in the “High Trade Dependence Case.” In this case, the firm chooses to continue illicitly trading with the target if  $\phi \leq \pi(\lambda - p(1 + \mu)) + \gamma$  and discontinues if  $\phi > \pi(\lambda - p(1 + \mu)) + \gamma$ . I again focus on two variables that influence the firm’s payoff: the probability that the firm gets caught for illicit trading with the target,  $p$ , and how much the firm cares about the policy outcome,  $\gamma$ . First, as the probability that the firm gets caught for trading with the target increases, the firm is less likely to engage in illicit trading with the target. Thus, imposed sanctions are more likely to succeed as the likelihood that the firm gets caught for illicit trading increases. Second, as the firm cares more about the policy outcome, it is less likely to engage in illicit trading with the target. Thus, imposed sanctions are more likely to succeed as the firm cares more about the policy outcome.

We should note here that these relationships between these factors and the success of imposed sanctions should not be as strong as the ones between these factors and threat success. The reason for this is that most cases where the firm is likely to comply with sanctions policies ( $p$  is high or  $\gamma$  is high) end with threat success, which may leave too little empirical variation in  $p$  and  $\gamma$  to reveal clear systematic

relationships between these factors and the success of imposed sanctions.

**Hypothesis 2.4.1** *Imposed sanctions are more likely to succeed as the probability that firms get caught for illicit trading decreases.*

**Hypothesis 2.4.2** *Imposed sanctions are more likely to succeed as firms' cost of evading sanctions decreases.*

**Hypothesis 2.4.3** *Imposed sanctions are more likely to succeed as the target values trade with the sender more.*

## 2.6 Conclusion

In contrast to the traditional perspective on economic sanctions, the main argument advanced in this chapter has been that states do not make decisions in sanctions context independently of how sanctions affect their firms and what these firms do in response. Rather, states anticipate firms' compliance behavior and incorporate it in their considerations, sometimes in a surprising manner. More specifically, this chapter presented the solution and empirical implications of a formal model of economic sanctions through which the behavior of firms influences the sender's and target's decisions during sanctions processes. The model offers at least two important insights into the study of economic sanctions. First, the effectiveness of a sanction

threat depends crucially on the anticipated behavior of firms—whether they comply with or evade the sanction. When governments are capable of effectively enforcing sanctions, their sanctions threats are more credible. Second, and surprisingly, the sender government is more likely to impose sanctions when he anticipates his firms' non-compliance with sanction policies. The conclusion is that a government with the capability to enforce sanctions not only is effective in using sanctions, but also is the one who is least likely to actually impose sanctions. Based on these insights, I derived several sets of testable hypotheses regarding the effects of sanctions on trade, the effectiveness of threats and imposed sanctions, and governments' decisions to impose sanctions.

The theoretical model also offers an implication for the existing perspective that argues that sanctions mostly serve symbolic purposes (e.g. Lindsay 1986, Whang 2011). Assuming that sanctions are costless to the sender states, scholars have argued that sanctions are often used symbolically to express morality and/or to raise domestic public support for policymakers. Unlike prior studies, the findings in this study identify the conditions under which senders use sanctions as a symbolic tool. That is, governments with the enforcement capability are less likely to use sanctions for symbolic reasons because impositions of sanctions would be costly for them. This also means that governments that cannot effectively enforce sanctions are the ones

who sanction symbolically because there are no economic consequences for doing so.

I conclude this chapter by pointing out some fruitful extensions of the model for future research. First, the current model assumes for the sake of simplicity that the sender is as uncertain about the firm's compliance behavior as the target. However, it may be more reasonable to assume that the sender knows more about his own firms than the target. This alternative assumption will not change the central results presented in this chapter. However, it would generate additional insights about the working of economic sanctions.

Second, another assumption in the model has to do with the treatment of firms. The current model assumes one representative firm and focuses on the question of how this firm affect states' decisions and vice-versa. However, as mentioned earlier, firms may take other firms into account when they make their compliance decisions and these decisions are likely to be strategic. Furthermore, firms may face different incentives and constraints depending on their characteristics. In fact, recent research in international trade demonstrates that exporting and importing firms are quite heterogeneous in their sizes and productivity (e.g. Bernard, Jensen, Redding & Schott 2007). Examining the firms' decisions when there are multiple, heterogeneous firms would lead to a number of interesting questions.

## 2.7 Appendix

### Solution

I solve the game for its perfect Bayesian equilibrium (PBE), which requires that the players' strategies, given their beliefs, are best responses to other players' strategies and beliefs. It is convenient to divide the solution in two parts: when  $\frac{1}{1-\lambda} \leq \kappa$  and when  $\frac{1}{1-\lambda} > \kappa$ . I call the first case the “High Trade Dependence Case” as the target values her trade with the sender compared to the disputed issue. In this case, the target's decision to stand firm depends on the firm's reaction to sanctions. If the firm continues trading with the target, the target will stand firm; but, if the firms choose to discontinue trading, she will acquiesce. To see this, consider  $T$ 's decision when  $A$  discontinues trading with  $T$ . If  $A$  discontinues trading,  $T$  will stand firm if  $1 - \kappa > -\lambda\kappa \Leftrightarrow \frac{1}{1-\lambda} > \kappa$  and acquiesce if  $\frac{1}{1-\lambda} \leq \kappa$ .

In the latter case, which I call the “Low Trade Dependence Case,” the target's decision to stand firm does not depend on the firms' decision – the target will stand firm regardless of the firm's decision. This is because the target does not value her trading relationship with the sender and/or because the value of the disputed issue is high for the target. First, consider the “High Trade Dependence” case.

**High Trade Dependence Case ( $\frac{1}{1-\lambda} \leq \kappa$ ):** Consider  $A$ 's decision to continue trading with  $T$ . Because  $A$  knows that  $T$  will stand firm if it continues trading and that  $T$  will acquiesce if it discontinues trading,  $A$  compares the payoffs associated with  $S_{\text{Failure}}|\text{Continue}$  and  $S_{\text{Success}}|\sim\text{Continue}$ . That is,  $A$  continues trading if  $p(-\mu\pi) + (1-p)\pi - \phi + \gamma \geq (1-\lambda)\pi \Leftrightarrow \phi \leq \pi(\lambda - p(1+\mu)) + \gamma$  and discontinues trading if  $\phi > \pi(\lambda - p(1+\mu)) + \gamma$ . Intuitively, the firm is more likely to continue trading with the target as (1) the probability of the firm getting caught decreases, (2) the penalty becomes less severe, (3) the profit from trading increases, and (4) the cost of evading sanctions decreases. Let us define  $\phi^*$  as a cutoff value of  $\phi$  such that  $\phi^* = \pi(\lambda - p(1+\mu)) + \gamma$ . If the cost of evasion is lower than this cutoff value  $\phi^*$ ,  $A$  will continue trading with  $T$ ; however, if the cost is higher than  $\phi^*$ ,  $A$  will discontinue trading. Since the sender and the target do not know exactly what  $\phi$  is, their beliefs about the probability that the firm will evade sanctions can be represented by  $F(\phi^*) = \Pr(\phi \leq \phi^*)$ .

Now, consider  $S$ 's decision to impose economic sanctions.  $S$  will impose sanctions if  $F(\phi^*)(0) + (1 - F(\phi^*))(1 - \lambda\kappa) \geq -\beta \Leftrightarrow F(\phi^*) \leq \frac{1-\lambda\kappa+\beta}{1-\lambda\kappa}$ . This condition always holds because  $\frac{1-\lambda\kappa+\beta}{1-\lambda\kappa} \geq 1$ . This means that the sender chooses to impose sanctions no matter what the firm decides to do.

Next, consider  $T$ 's decision to reject  $S$ 's demand.  $T$  will reject the demand if she



is optimistic that  $A$  will continue trading with her. That is,  $T$  will reject the demand if  $F(\phi^*)(1) + (1 - F(\phi^*))(-\lambda\kappa) \geq 0 \Leftrightarrow F(\phi^*) \geq \frac{\lambda\kappa}{1+\lambda\kappa}$ . Regardless of  $T$ 's decision to reject the demand,  $S$  will threaten to impose sanctions.

Thus, in the “High Trade Dependence” case, the game ends with a threat success, a sanctions success, or a sanctions failure. A threat is more likely to be successful when the target is pessimistic that the firm will continue trading. If the sender and target both believe that the firm will evade sanctions, a threat will fail and sanctions will be imposed. The success of sanctions depends on whether or not the firm evade sanctions.

**Low Trade Dependence Case** ( $\frac{1}{1-\lambda} > \kappa$ ): In this case,  $T$  will stand firm regardless of  $A$ 's action either because the value of the trading relationship with  $S$  ( $\kappa$ ) is low compared to the value of the policy or because  $\lambda$  is large (no incentive to acquiesce). Again, consider  $A$ 's decision to continue trading with  $T$ . Since the target will not yield to sanctions regardless of the firm's decision, the firm will compare the payoffs associated with the following two outcomes: SFailure|Continue and SFailure| ~Continue.  $A$  will continue trading if  $p(-\mu\pi) + (1 - p)\pi - \phi \geq 0 \Leftrightarrow \phi \leq \pi(1 - p(1 + \mu))$ . Let us define  $\phi^{**}$  as another cutoff value of  $\phi$  such that  $\phi^{**} = \pi(1 - p(1 + \mu))$ . Then, the sender and the target's beliefs that  $A$  will evade

sanctions can be expressed by  $F(\phi^{**}) = \Pr(\phi \leq \phi^{**})$ .

Consider  $S$ 's decision to carry out his threat and impose sanctions.  $S$  will impose sanctions if  $F(\phi^{**})(0) + (1 - F(\phi^{**}))(-\kappa) \geq -\beta \Leftrightarrow F(\phi^{**}) \geq \frac{\kappa - \beta}{\kappa}$  and will not impose them if  $F(\phi^{**}) < \frac{\kappa - \beta}{\kappa}$ .

Now, consider  $T$ 's decision to reject  $S$ 's demand. If  $F(\phi^{**}) < \frac{\kappa - \beta}{\kappa}$  ( $S$  backs down),  $T$  will reject the demand because she knows her rejection will lead to the sender's capitulation. If  $F(\phi^{**}) \geq \frac{\kappa - \beta}{\kappa}$  ( $S$  imposes the sanctions),  $T$  will also reject the demand. To see this, recall that the sender will impose sanctions when he believes that the firm will evade sanctions. In this case, because the target is also optimistic that the firm will evade sanctions, she will reject the demand. More formally, we can compare the target's payoff associated with TSuccess and her expected utility from rejecting  $S$ 's demand. That is,  $T$  rejects the demand if  $F(\phi^{**})(1) + (1 - F(\phi^{**}))(1 - \kappa) \geq 0 \Leftrightarrow F(\phi^{**}) \geq \frac{\kappa - 1}{\kappa}$ . This condition always holds because  $\beta < 1$  and  $\frac{\kappa - 1}{\kappa} \leq \frac{\kappa - \beta}{\kappa}$ .

Finally, consider  $S$ 's decision to make a demand. Suppose  $F(\phi^{**}) \geq \frac{\kappa - \beta}{\kappa}$ . In this case,  $S$  knows that making a demand will lead to  $T$ 's rejection of the demand and ultimately to the failure of imposed sanctions. On the other hand, if the sender maintains the status quo, he will incur the domestic punishment for taking no action. Thus, if the cost of doing nothing is high or  $\alpha \geq \beta$ , the sender will make a demand. In contrast, if the cost of taking no action is low or  $\alpha < \beta$ , the sender will retain

the status quo. Next, when  $F(\phi^{**}) < \frac{\kappa - \beta}{\kappa}$ ,  $S$  knows that if he makes a demand, the target will reject it and he will back down from the threat. On the other hand, if he maintains the status quo, he will suffer the domestic punishment from taking no action. Thus, if the reputation cost is low compared to the cost of taking no action or  $\alpha \geq \beta$ , the sender will choose to make a threat and backs down later. If the reputation cost is high or  $\alpha < \beta$ , the sender will retain the status quo.

Thus, in the “Low Trade Dependence” case, the game ends with either the status quo, the sender’s capitulation, or a sanctions failure. Notice that there is no success of a threat or imposed sanctions in this case.

**Proposition 1:** *Define  $\phi^* = \pi(\lambda - p(1 + \mu)) + \gamma$  and  $\phi^{**} = \pi(1 - p(1 + \mu))$ . The unique PBE of the game consists of the following strategies and beliefs:*

1. *If  $\frac{1}{1-\lambda} \leq \kappa$  and  $F(\phi^*) \geq \frac{\lambda\kappa}{1+\lambda\kappa}$ ,  $S$  makes a demand;  $T$  rejects the demand;  $S$  imposes sanctions;  $A$  continue trading with  $T$  if  $\phi \leq \phi^*$  and discontinue if  $\phi > \phi^*$ ;  $T$  stands firm if  $A$  continues, and acquiesces if  $A$  discontinues.*
2. *If  $\frac{1}{1-\lambda} \leq \kappa$  and  $F(\phi^*) < \frac{\lambda\kappa}{1+\lambda\kappa}$ ,  $S$  makes a demand;  $T$  accepts the demand;  $S$  imposes sanctions;  $A$  continue trading with  $T$  if  $\phi \leq \phi^*$  and discontinue if  $\phi > \phi^*$ ;  $T$  stands firm if  $A$  continues, and acquiesces if  $A$  discontinues.*
3. *If  $\frac{1}{1-\lambda} > \kappa$  and  $F(\phi^{**}) \geq \frac{\kappa - \beta}{\kappa}$  and  $\beta \leq \alpha$ ,  $S$  makes a demand;  $T$  rejects*

the demand;  $S$  imposes sanctions;  $A$  continue trading with  $T$  if  $\phi \leq \phi^{**}$  and discontinue if  $\phi > \phi^{**}$ ;  $T$  stands firm.

4. If  $\frac{1}{1-\lambda} > \kappa$  and  $F(\phi^{**}) \geq \frac{\kappa-\beta}{\kappa}$  and  $\beta > \alpha$ ,  $S$  retains the status quo;  $T$  rejects the demand;  $S$  imposes sanctions;  $A$  continue trading with  $T$  if  $\phi \leq \phi^{**}$  and discontinue if  $\phi > \phi^{**}$ ;  $T$  stands firm.
5. If  $\frac{1}{1-\lambda} > \kappa$  and  $F(\phi^{**}) < \frac{\kappa-\beta}{\kappa}$  and  $\beta \leq \alpha$ ,  $S$  makes a demand;  $T$  rejects the demand;  $S$  does not impose sanctions;  $A$  continue trading with  $T$  if  $\phi \leq \phi^{**}$  and discontinue if  $\phi > \phi^{**}$ ;  $T$  stands firm.
6. If  $\frac{1}{1-\lambda} > \kappa$  and  $F(\phi^{**}) < \frac{\kappa-\beta}{\kappa}$  and  $\beta > \alpha$ ,  $S$  retains the status quo;  $T$  rejects the demand;  $S$  does not impose sanctions;  $A$  continue trading with  $T$  if  $\phi \leq \phi^{**}$  and discontinue if  $\phi > \phi^{**}$ ;  $T$  stands firm.

## Chapter 3

### **Empirical Analysis I: Firms, Domestic Enforcement, and Impact of Sanctions on Trade**

#### **3.1 Introduction**

This chapter evaluates some of the model's implications regarding the impact of sanctions on sender-target trade relationships. More specifically, it empirically tests Hypotheses 2.1.1, 2.1.2, and 2.1.6 which were derived from the model developed in Chapter 2. The hypotheses suggest that characteristics of the sender state are important for how sanctions affect his trade relationship with the target. Therefore, I introduce two novel measures of the characteristics of sender states. I then report the results of the analysis and show how some factors identified by the theoretical model influence the impact of sanctions on sender-target trade relationships. As these tests address a part of the model which directly links the behavior of firms to the implementation of imposed sanctions, positive results for them would provide more confidence in the causal mechanism pictured in the theory.

## 3.2 Research Design

Hypotheses 2.1.1, 2.1.2, and 2.1.6 presented in Chapter 2 suggest that impositions of sanctions lead to reduction in sender-target trade, but the extent of the reduction depends upon two factors: namely, the probability that firms get caught for illicit trading and the extent to which sender governments' and their firms' preferences align with each other. To test the hypotheses, I conduct two separate analyses using different dependent variables, namely bilateral export and import volumes. While some studies analyze the impact of sanctions on more aggregate, total trade volume (Caruso 2003, Hufbauer, Elliott, Cyrus & Winston 1997), differentiating exports from imports is more appropriate and provides more precise estimates of sanctions' effects, as they can be specifically targeted at either exports or imports in some cases (e.g. Yang, Askari, Forrer & Teegen 2004, Hufbauer & Oegg 2003).

In the first set of analyses, the dependent variable is the natural log of export volume from state  $i$  to  $j$  ( $\ln(\text{Export})_{i,j,t}$ ) and I analyze the effect of export sanctions on the sender-target export levels. In the second set, the dependent variable is the natural log of import volume from state  $i$  to  $j$  ( $\ln(\text{Import})_{i,j,t}$ ) and the effect of import sanctions on the import levels is examined. The unit of analysis is the directed-dyad-year, which conforms with the theoretical expectations about the level of trade between state  $i$  and state  $j$ . The data on bilateral trade were obtained from

Gleditsch (2002) and deflated to 2000 U.S. dollars using the U.S. Consumer Price Index following Rose (2004).<sup>1</sup> As a result of data availability, the data set analyzed here includes 362,964 observations with 26,818 directed-dyads from 1985 to 2000.

### 3.2.1 Independent Variables

#### Sanctions

In order to identify sanctions episodes, I use the Threats and Impositions of Economic Sanctions (TIES) data set (Morgan, Bapat & Krustev 2009), which codes both threats and sanctions and currently covers the 1971-2000 period.<sup>2</sup> TIES defines sanctions as actions that one or more sender states or an international institution take to limit economic relations with a single target state in an effort to persuade the latter to change its policies. Economic coercion begins when the sender makes a threat about the possibility of sanctions - threats are usually initiated through verbal statements by government officials or the drafting of legislation against the target.

I use five decision rules to restrict the sample of sanction cases. First, because my argument addresses the effect of *imposed* sanctions, rather than *threats*, I exclude all the episodes where sanctions were not imposed. Second, I exclude all multilateral

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<sup>1</sup> The index is available online at the website of U.S. Bureau of Labor Statistics ([www.bls.gov/cpi/](http://www.bls.gov/cpi/)).

<sup>2</sup> The TIES data set can be obtained at <http://www.unc.edu/~bapat/TIES.htm>.

sanction cases, defined as a case when there are more than one sender and/or international institutions are involved. I focus on unilateral sanctions because the model speaks only to cases with one sender. Third, as the theory considers the effects of trade sanctions, I exclude non-trade sanctions such as termination of foreign aid, asset freezes, and travel bans. Fourth, I exclude sanction cases that did not last longer than three months. Fifth, I also exclude cases in which the target was an international organization or an entity excluded from the list of the Correlates of War state memberships (e.g. Macao).

Based on these sanction cases, I constructed two key independent variables:  $\text{Exp Sanction}_{i,j,t}$  and  $\text{Imp Sanction}_{i,j,t}$ . The first variable is a dummy variable that is coded 1 if state  $i$  has export restrictions imposed against state  $j$  in year  $t$ , and 0 otherwise. This variable is used for the analysis of the effect of a sanction on export volumes.

The second variable is also a dummy variable that is coded 1 if state  $i$  restricts imports from  $j$  to  $i$  in year  $t$ , and 0 otherwise. This variable is used when I analyze the effect of a sanction on import volumes. We expect that both sanction variables are negatively related to the bilateral export and import volumes.

Some sanctions are clearly more severe than others. In order to achieve better comparability in the types of sanctions, I also include a variable,  $\text{Complete Embargo}_{i,j,t}$ ,



a dummy variable that is coded 1 if state  $i$  imposed a complete embargo against state  $j$  in year  $t$ , and 0 otherwise. This variable is included in both analyses of export and import volumes.

### **Risk of Non-compliance**

One key implication from the theory is that the effect of sanctions on the sender-target trade is conditional on the likelihood of firms getting caught for their illicit trading. To proxy for this unobservable probability, I construct a variable,  $\text{Eff Bureaucracy}_{i,t}$ . The idea behind this variable is that the sender with an effective bureaucracy should be able to monitor the behavior of firms more efficiently and detect those who violate sanction policies with a higher probability. In turn, firms operating in a state with an effective bureaucracy should view violations as riskier options and thereby should be less likely to evade sanction policies. Ideally, I would have a variable that measures the effectiveness (e.g. the professionalism, how corrupted the sanctions enforcement agencies are, how many resources these agencies have) of bureaucratic agencies that specifically enforce sanctions. Unfortunately, such data do not exist. Thus, I opted for using an aggregate measure of bureaucratic quality from the International Country Risk Guide (ICRG) data set, which measures effectiveness on a scale from 1 to 4 on the basis of expert assessments (4

denotes good quality and 1 poor quality) for 140 countries from 1985 to 2007.<sup>3</sup> This bureaucratic quality variable measures strength, professionalism, and efficiency of bureaucracies in each country. This information adequately captures the effectiveness of sanctions enforcement agencies because many bureaucratic agencies get involved in sanctions enforcement. Using this data set from ICRG, I construct a binary variable ( $\text{Eff Bureaucracy}_{i,t}$ ) that codes 1 if the bureaucratic quality variable takes a value of 4, and 0 otherwise. To test the interactive effect between sanctions and this variable, I include  $\text{Exp Sanction}_{i,j,t} \times \text{Eff Bureaucracy}_{i,t}$  and  $\text{Imp Sanction}_{i,j,t} \times \text{Eff Bureaucracy}_{i,t}$  in the analyses.

### **Preference Alignment between Governments and Firms**

Another hypothesis from the theory suggests that the effect of sanctions depends on the extent to which firms care about social welfare. To proxy for this concept, I construct a variable that measures the extent to which states own the firms within their territories, or the extent of state-owned enterprise in the states. The idea here

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<sup>3</sup> To construct the bureaucratic quality variable, another source for data is the World Bank's World Governance Indicators (WGIs) data set (e.g. Kaufmann, Kraay & Mastruzzi 2009). However, the temporal coverage of WGIs is from 1996 to 2010, making their use in the present analysis somewhat limited. For the same reason, the ICRG bureaucratic quality has also been used more widely in a number of studies to proxy for state capacity, and the quality of governance, and bureaucratic efficiency (e.g. Knack 2001, Smith, Muir, Walpole, Balmford & Leader-Williams 2003, de Rouen & Sobek 2004). Moreover, in a study by Knack & Rahman (2007), this variable has been validated against a more detailed, but limited, dataset on bureaucratic quality created by Evans & Rauch (1999).

is that if firms are owned by the state, their preferences would be more aligned with the government's foreign policy goals so that we should expect less evasion of sanctions. In the current analysis, I use data from the Economic Freedom of the World data set (Gwartney, Lawson & Block 1996, Gwartney, Lawson & Norton 2008) which records government investment as a share of total investment in 117 countries between 1980 and 2000. Because the data are skewed, I include the natural log of the variable and use it ( $\ln(\text{SOE})_{it}$ ). Because the hypotheses specify conditional relationships, I also include the interaction terms, namely  $\text{Exp Sanction}_{i,j,t} \times \ln(\text{SOE})_{i,t}$  and  $\text{Imp Sanction}_{i,j,t} \times \ln(\text{SOE})_{i,t}$ .

### 3.2.2 Empirical Models

To estimate the effect of sanctions on bilateral trade, I use the gravity model used extensively in the trade literature as well as international relations literature to predict trade levels between a pair of countries (e.g. Bergstrand 1985). The use of this model is attractive because it is tractable and also based on theoretical micro-foundations of bilateral trade. I first specify gravity models of bilateral trade used in the analyses. For the first set of analyses, I specify the gravity model in the following way:

$$\begin{aligned}
\ln(\text{Export})_{i,j,t} = & \alpha_{i,j} + \beta_0 \text{Exp Sanction}_{i,j,t} + \beta_1 \text{Complete Embargo}_{i,j,t} + \\
& \beta_2 \text{Exp Sanction}_{i,j,t} \times \text{Eff Bureaucracy}_{i,t} + \beta_3 \text{Eff Bureaucracy}_{i,t} + \\
& \beta_4 \text{Exp Sanction}_{i,j,t} \times \ln(\text{SOE})_{i,t} + \beta_5 \ln(\text{SOE})_{i,t} + \\
& \beta_7 \ln(\text{GDP})_{i,t} + \beta_8 \ln(\text{GDP})_{j,t} + \beta_9 \ln(\text{Pop})_{i,t} + \beta_{10} \ln(\text{Pop})_{j,t} + \\
& \beta_{11} \text{Dem}_{i,t} + \beta_{12} \text{Dem}_{j,t} + \beta_{13} \text{Defense}_{i,j,t} + \epsilon_{i,j,t}
\end{aligned}$$

Similarly, for the analyses of import volume, the gravity model is specified as follows:

$$\begin{aligned}
\ln(\text{Import})_{i,j,t} = & \alpha_{i,j} + \beta_0 \text{Imp Sanction}_{i,j,t} + \beta_1 \text{Complete Embargo}_{i,j,t} + \\
& \beta_2 \text{Imp Sanction}_{i,j,t} \times \text{Eff Bureaucracy}_{i,t} + \beta_3 \text{Eff Bureaucracy}_{i,t} + \\
& \beta_4 \text{Imp Sanction}_{i,j,t} \times \ln(\text{SOE})_{i,t} + \beta_5 \ln(\text{SOE})_{i,t} + \\
& \beta_7 \ln(\text{GDP})_{i,t} + \beta_8 \ln(\text{GDP})_{j,t} + \beta_9 \ln(\text{Pop})_{i,t} + \beta_{10} \ln(\text{Pop})_{j,t} + \\
& \beta_{11} \text{Dem}_{i,t} + \beta_{12} \text{Dem}_{j,t} + \beta_{13} \text{Defense}_{i,j,t} + \epsilon_{i,j,t}
\end{aligned}$$

where  $\ln(\text{GDP})_{i,t}$  is the natural log of the gross domestic product (GDP) of country  $i$  in time period  $t$ . This variable is used to proxy the size of the nation's economy within the gravity model. Thus, these GDP variables should be positively related to export and import volumes. The data are obtained from Gleditsch (2002).  $\ln(\text{Pop})_{i,t}$

denotes the natural log of the population of country  $i$  in time period  $t$ . In the gravity framework, this variable represents the size of the nation's market. I expect this population variable to be positively associated with total trade. The data on populations are also obtained from Gleditsch (2002).  $\text{Dem}_{i,t}$  is a dummy variable that takes a value of 1 if country  $i$  is a democracy. This variable is coded 1 if country  $i$  scores six or higher on the Polity IV democracy scale (Marshall & Jaggers 2005). These democracy variables are expected to be positively related to total trade.  $\text{Defense}_{i,j,t}$  is a dummy variable that is coded 1 if a pair of countries has a defense pact with one another. The data I use to code this variable is from the ATOP dataset (Leeds, Ritter, Mitchell & Long 2002). I expect the defense pact variable to be positively related to total trade (e.g. Long 2003). To account for heterogeneity across time, I include year dummy variables. Similarly, I also include directed-dyad specific variables to account for heterogeneity across trading relationships (e.g. Tomz, Goldstein & Rivers 2007).<sup>4</sup>

Table 3.1 : Analysis of Bilateral Import Level

	Model 1	Model 2	Model 3	Model 4
Imp Sanction <sub><i>i,j,t</i></sub>	-0.17** (0.03)	-0.03 (0.09)	0.30 (0.24)	0.81** (0.32)
Imp Sanction <sub><i>i,j,t</i></sub> * Eff Bureaucracy <sub><i>i,t</i></sub>		-0.18* (0.10)		-0.28** (0.11)
Eff Bureaucracy <sub><i>i,t</i></sub>		0.01** (0.00)		0.02** (0.01)
Imp Sanction <sub><i>i,j,t</i></sub> × ln(SOE) <sub><i>i,t</i></sub>			-0.16** (0.08)	-0.26** (0.11)
ln(SOE) <sub><i>i,t</i></sub>			0.15** (0.00)	-0.03** (0.01)
Complete Embargo <sub><i>i,j,t</i></sub>	-1.55** (0.08)	-1.74** (0.09)	-1.75** (0.09)	-1.73** (0.09)
ln(Population) <sub><i>i,t</i></sub>	0.14** (0.02)	0.17** (0.02)	-0.02 (0.02)	0.01 (0.03)
ln(Population) <sub><i>j,t</i></sub>	0.04* (0.02)	0.15** (0.02)	0.04** (0.02)	0.09** (0.02)
ln(GDP) <sub><i>i,t</i></sub>	0.47** (0.01)	0.64** (0.01)	0.52** (0.01)	0.58** (0.01)
ln(GDP) <sub><i>j,t</i></sub>	0.42** (0.01)	0.47** (0.01)	0.46** (0.02)	0.49** (0.01)
Defense Pact <sub><i>i,j,t</i></sub>	0.22** (0.02)	0.29** (0.02)	0.22** (0.02)	0.27** (0.03)
Democracy <sub><i>i,t</i></sub>	0.05** (0.00)	0.10** (0.01)	0.05** (0.01)	0.11** (0.01)
Democracy <sub><i>j,t</i></sub>	0.05** (0.00)	0.06** (0.01)	0.06** (0.01)	0.06** (0.01)
Constant	-7.87** (0.23)	-10.89** (0.32)	-7.04** (0.28)	-8.45** (0.36)
Observations	362,964	248,906	254,920	200,531

Note: Coefficients on the year and directed-dyad dummy variables are not reported due to space consideration. Standard errors in parentheses.

Two-tailed tests \* $p < .05$ , \*\* $p < .001$ .

Table 3.2 : Analysis of Bilateral Export Volume

	Model 5	Model 6	Model 7	Model 8
Exp Sanction <sub><i>i,j,t</i></sub>	-0.56** (0.04)	-0.01 (0.22)	-0.50* (0.30)	0.36 (0.45)
Exp Sanction <sub><i>i,j,t</i></sub> × Eff Bureaucracy <sub><i>i,t</i></sub>		-0.16** (0.06)		-0.38** (0.14)
Eff Bureaucracy <sub><i>i,t</i></sub>		0.01 (0.01)		0.01 (0.01)
Exp Sanction <sub><i>i,j,t</i></sub> × ln(SOE) <sub><i>i,t</i></sub>			-0.03 (0.10)	-0.14 (0.10)
ln(SOE) <sub><i>i,t</i></sub>			0.01 (0.01)	-0.02** (0.01)
Complete Embargo <sub><i>i,j,t</i></sub>	-0.94** (0.09)	-1.01** (0.09)	-1.05** (0.10)	-1.01** (0.10)
ln(Population) <sub><i>i,t</i></sub>	0.08** (0.02)	0.16** (0.02)	-0.18** (0.02)	-0.08** (0.02)
ln(Population) <sub><i>j,t</i></sub>	0.07** (0.02)	0.15** (0.02)	0.06** (0.02)	0.10** (0.02)
ln(GDP) <sub><i>i,t</i></sub>	0.42** (0.01)	0.57** (0.01)	0.46** (0.01)	0.50** (0.01)
ln(GDP) <sub><i>j,t</i></sub>	0.47** (0.01)	0.53** (0.01)	0.50** (0.01)	0.54** (0.01)
Defense Pact <sub><i>i,j,t</i></sub>	0.21** (0.02)	0.32** (0.02)	0.21** (0.02)	0.30** (0.03)
Democracy <sub><i>i,t</i></sub>	0.04** (0.00)	0.09** (0.01)	0.03** (0.01)	0.09** (0.01)
Democracy <sub><i>j,t</i></sub>	0.05** (0.00)	0.06** (0.01)	0.06** (0.01)	0.07** (0.01)
Constant	-7.59** (0.23)	-10.68 (0.32)	-8.20 (210.29)	-2.67* (1.24)
Observations	362,964	248,906	254,920	200,531

Note: Coefficients on the year and directed-dyad dummy variables are not reported due to space consideration. Standard errors in parentheses.

Two-tailed tests \* $p < .05$ , \*\* $p < .001$ .

### 3.3 Empirical Results

The empirical results for the analyses of import and export volumes are summarized in Tables 3.1 and 3.2, respectively. The specifications presented as Models 1 and 5 include only the sanction variables and all the gravity controls; Models 2 and 6 include *Eff Bureaucracy* and its interaction term with the sanction variables; Models 3 and 7 include  $\ln(\text{SOE})$  and its interaction with the sanction variables; Models 4 and 8 are the full specifications.

First, consider Models 1 and 4. The coefficients of the *Imp Sanction* and *Exp Sanction* are negative as predicted and statistically significant. This suggests that sanctions depress export and import volumes between the sender and the target. It is important to note that these empirical findings are novel. Using the data set produced by Hufbauer et al. (1990), several existing studies have investigated the impact of sanctions on trade and have reported a large depressing effect of severe sanctions (e.g. complete embargoes). However, they consistently found the impact of moderate sanctions to be negligible and unimportant (Caruso 2003, Askari et al. 2003, Hufbauer & Oegg 2003, Hufbauer et al. 2007). Using the new TIES data set,

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<sup>4</sup> These model specifications do not include a distance variable that is often used in gravity models. This is because I use directed dyad fixed effects in the models, which estimates the within-effects of variables, and any effect of time-invariant variable such as geographical distance cannot be estimated.



the results here suggest that more moderate sanctions have a large impact on the sender-target trade relationship after controlling for the effect of complete embargoes.

Next, the results for import volumes will be discussed in more detail. Consider Model 2 in Table 3.1. The findings for the interaction term between **Imp Sanction** and **Eff Bureaucracy** supports Hypothesis 1. The coefficient of the interaction is negative and statistically significant. This suggests that when the sender has an effective bureaucracy, a sanction has a large negative impact on export from the sender to the target. In contrast, the lack of effective bureaucracy reduces the impact of sanction. In Model 3, the coefficient of the interaction between **Imp Sanction** and  $\ln(\text{SOE})$  is also negative, as predicted, and statistically significant. This implies that when more firms in the sender are owned by the government, a sanction has a larger impact on the import volume from the target to the sender than when the sender owns fewer firms. In Model 4, the coefficients on the interactions become even larger and more significant. To interpret these findings in a more substantive way, I calculated the effects of the sanction variable at different values of **Eff Bureaucracy** and  $\ln(\text{SOE})$ . More specifically, using estimates from Model 4, I simulate  $\frac{E[\text{Import}|\text{Imp Sanction}=1, \text{Eff Bureaucracy}=X]}{E[\text{Import}|\text{Imp Sanction}=0, \text{Eff Bureaucracy}=X]} - 1$  and  $\frac{E[\text{Import}|\text{Imp Sanction}=1, \ln(\text{SOE})=X]}{E[\text{Import}|\text{Imp Sanction}=0, \ln(\text{SOE})=X]} - 1$  as I set the **Eff Bureaucracy** and  $\ln(\text{SOE})$  at different values, holding all the other variables at their median.

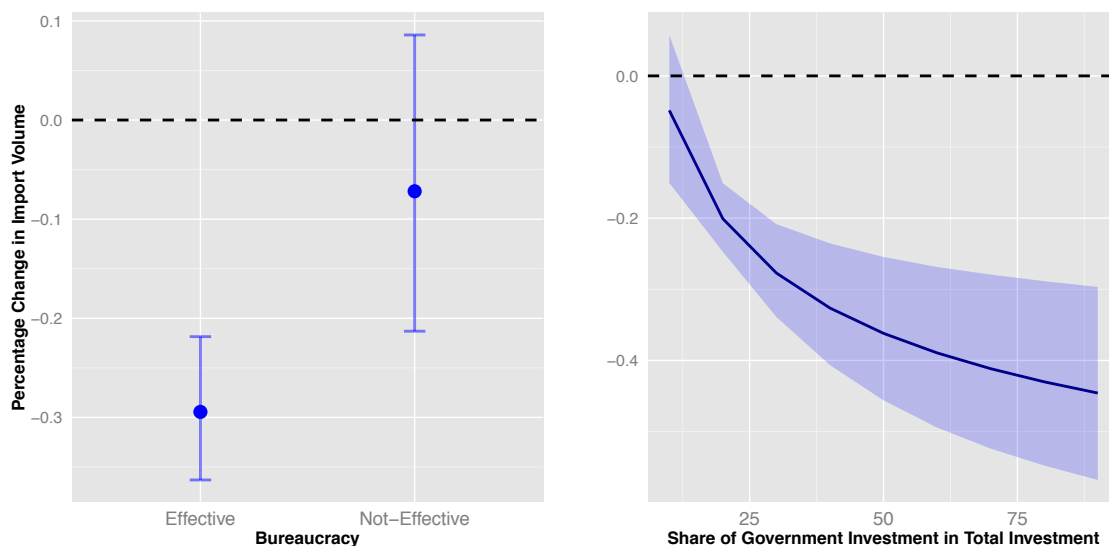


Figure 3.1 : **Conditional Effect of a Sanction on Import Volume:** Each panel presents the 95% confidence band of the effect of a sanction on import volume. The 95% confidence interval at each incremental step is based on 1,000 simulations. All other variables except for the year dummies are held at their median.

The left panel in Figure 3.1 depicts how the impact of a sanction on export changes as the sender's bureaucracy becomes less effective. The depressing effect of a sanction is substantively large when the sender has an effective bureaucracy: the mean effect is about 30% reduction in import volume. However, this effect decreases and becomes indistinguishable from zero as the sender's bureaucracy becomes non-effective. This graph is thus consistent with my hypothesis that an effective bureaucracy amplifies the negative impact of a sanction on trade. The right panel in Figure 1 is also consistent with my hypothesis. It shows how the impact of a sanction

changes as the sender owns more firms within the country. When the sender government invests about 10% of total investment in the country, the impact of a sanction is negligible; however, as the amount of government investment increases, the effect becomes quite large. In sum, the results from my analysis of export volumes support that sanctions depress sender-target trade but only when the sender has effective bureaucracy and/or owns firms within the country.

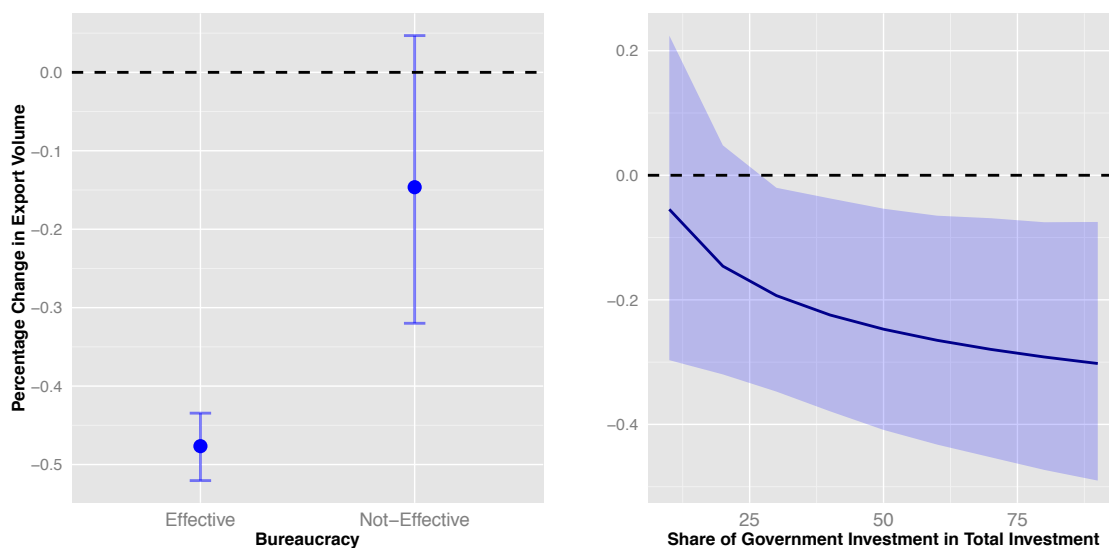


Figure 3.2 : **Conditional Effect of a Sanction on Export Volume:** Each panel presents the 95% confidence band of the effect of a sanction on export volume. The 95% confidence interval at each incremental step is based on 1,000 simulations. All other variables except for the year dummies are held at their median.

I now turn to the models of export volumes in Table 3.2. The results are similar to what I found with import volumes, but it is worth mentioning one difference.

While the results for the bureaucratic effectiveness variable is quite similar, the coefficients on the interactions between  $\ln(\text{SOE})$  and  $\text{Exp Sanction}$  are negative but not statistically significant in Models 7 and 8. However, in Figure 3.2 where I graphed the substantive effects of a sanction by the different levels of government investment, I see that the effect of a sanction becomes distinguishable from zero when the share of government investment in total investment reaches about 30%. Though the effect of this variable is not very strong, this result suggests that as the sender owns more firms within the country, sanctions have more depressing effects on its export from the target.

### 3.4 Conclusion

In this chapter, I have tested three implications of the model presented in Chapter 2. More specifically, the empirical analyses have examined the effect of sanctions on sender-target trade relationships and, more importantly, how the sanctions' effects on trade change once firms' behavior and enforcement were taken into account. When firms are likely to abide by sanction policies, we should observe more depressing impacts of sanctions on sender-target trade. Consistent with this expectation, the findings in this chapter suggest that sanctions reduce sender-target trade when they are imposed by those with effective bureaucracies and with state-owned enterprises.

By showing that firms' considerations do shape the implementation of sanctions in a systematic manner, these results provide confidence for the theoretical model in Chapter 2.

While these findings are central for the causal mechanism laid out in Chapter 2, they do not yet show that decisions by sender and target states are influenced by the behavior of firms. To evaluate this aspect of the theory, I need to test another set of hypotheses that link the firms' calculations to several different decisions faced by sender and target states during sanctions episodes. This is the task undertaken in the next chapter.

## Chapter 4

### **Empirical Analysis II: Firms, Domestic Enforcement, and Sanctions Effectiveness**

#### **4.1 Introduction**

This chapter analyzes how domestic enforcement of sanctions and the behavior of firms affect different outcomes of sanctions. More specifically, it evaluates the hypotheses regarding the success of sanction threats (Hypotheses 2.2.1-2.2.3), the impositions of sanctions (Hypotheses 2.3.1-2.3.4), and the success of imposed sanctions (Hypotheses 2.4.1-2.4.3). To evaluate these hypotheses, I conduct three sets of analyses with different outcome variables. The findings in this chapter provide strong support for the argument that the behavior of firms has an important influence on states' decisions and sanctions outcomes.

#### **4.2 Research Design**

To test the hypotheses, I draw economic sanctions data from the TIES data set. Because my hypotheses are about outcomes at different stages in sanctions episodes

(threat success, sanctions imposition, and success of imposed sanctions), I conduct three sets of analyses using three separate samples and three different dependent variables.

In the first set of analyses, I examine threat successes with all cases where sanctions are threatened. TIES includes 888 sanctions cases, but after excluding (1) observations with missing values, (2) those that started with the imposition of sanctions without threats and (3) those with multiple senders, I am left with a total of 319 unilateral sanctions cases for the analysis of threat successes.<sup>1</sup> The dependent variable for these analyses specifies whether sanctions are successful at the threat stage in sanctions episodes. I code a case as a successful threat if TIES reports that the target capitulated or partially capitulated or the case ended with a negotiated settlement.

Second, to analyze the sender's decision to impose sanctions, the sample was generated by excluding from all the threat cases those in which the target acquiesced prior to sanctions imposition. A total of 229 cases are used for the analysis of sanctions imposition. The dependent variable here specifies if the sender imposes sanctions. Using information on the date of sanctions impositions, I code a case as

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<sup>1</sup> I also exclude cases in which the target is an international organization or an entity that the Correlates of War project does not recognize as a state (e.g. Macao or Hong-Kong). Due to limits in the availability of bureaucratic quality measure, the temporal domain of my data is limited to 1985-2000.

an imposition case if TIES codes a non-missing value for the sanctions imposition date.

Finally, I analyze the target's decision to acquiesce after sanctions are imposed. I exclude from threat cases those in which the target acquiesced prior to sanctions imposition and those in which the sender did not impose sanctions. For this analysis, a total of 119 cases are analyzed. For this set of analyses, the dependent variable indicates whether or not the target complies with the sender's demands after sanctions are imposed. I code a case as a successful (imposed) sanction if TIES reports that the target capitulated or partially capitulated or that the case ended with a negotiated settlement. Probit models are used to analyze how these outcome variables are related to a set of independent variables, which I will discuss next.

#### **4.2.1 Independent Variables**

To test the hypotheses, five independent variables are constructed. The first two variables are prepared to test Hypotheses 2.1.1, 2.2.1, and 2.3.1 and proxy for the probability that the firm gets caught for illicit trading. The third variable captures the extent to which firms care about policy outcomes for the tests of Hypotheses 2.1.2 and 2.3.2. The fourth variable measures senders' reputation costs and will be used to evaluate Hypotheses 2.2.2 and 2.2.3. Finally, the fifth variable captures the



extent to which targets value the trading relationships with senders and will be used to test Hypotheses 2.1.3, 2.2.4, and 2.3.3.

### **Risk of Non-compliance**

The first independent variable is **Effective Bureaucracy**, which was discussed and used in Chapter 3. The logic behind this is as follows: because sanction policies are enforced by bureaucratic agencies, their quality and efficiency should be an important determinant of how likely firms get caught for their non-compliance behavior. Again, I use the bureaucratic quality index from the ICRG data set, which measures each country's bureaucratic quality on a scale from 1 to 4 on the basis of expert surveys (4 means a good quality and 1 poor quality). Though this measure represents the overall bureaucratic quality of the country, it is reasonable to use it for my purposes because multiple agencies are often involved in enforcement of sanctions and thereby their overall quality should be of interest to us. Using information from ICRG, a binary variable **Effective Bureaucracy** is prepared, which takes a value of 1 if the sender scores 4 on the ICRG's bureaucratic quality variable, and 0 otherwise. All other things being equal, **Effective Bureaucracy** should increase the chance that the target acquiesces to the threat, decrease the chance that the sender imposes sanctions, and increase the chance that imposed sanctions succeed.

The second independent variable is **Distance**, which is the natural log of the capital-to-capital distance between the sender and target. This variable relies on the validity of the theoretical argument and empirical claims in the trade literature, which comes to a clear consensus of a correlation between the distance between two countries and the number of firms that engage in trade between them. The argument is that the greater the distance between two countries, the fewer firms engage in trade between those countries (e.g. Bernard et al. 2007, Helpman, Melitz & Rubinstein 2008, Bernard, Jensen, Redding & Schott 2009, Bernard, Redding & Schott 2011). Trade theorists argue that this is because the longer distance increases transaction costs for trade, which prevents many, often smaller, firms from entering the market (e.g. Melitz 2003, Yeaple 2005). The fewer firms involved in trade between the sender and target, the easier it should be for the sender government to monitor these firms' behavior. Because a greater distance between countries is related to having fewer firms involved in the bilateral trade, the firms that are trading with distant targets should fear getting caught for illicit trading. Therefore, *ceteris paribus*, greater sender-target distance should increase the chance that the target acquiesces to the threat, decrease the chance that the sender imposes sanctions, and increase the chance that imposed sanctions succeed.

### **Preference Alignment between Governments and Firms**

The third independent variable is **State-Owned Enterprise**, which was also discussed and used in Chapter 3. The idea behind the construction of this variable is that state-owned corporations should care more about policy objectives sought after by their governments than private ones do. Ideally, I would have information about the degree of state-ownership of firms involved in trade with the target. However, because I do not have access to data at the firm-level, I opt to use more aggregate data on government investment as a share of total investment in countries from the Economic Freedom of the World data set (Gwartney, Lawson & Block 1996, Gwartney, Lawson & Norton 2008). Because the data are skewed, the natural log of the variable is used for the analyses. *Ceteris paribus*, **State-Owned Enterprise** should increase the chance that a threat succeeds and that imposed sanctions succeed.

### **Reputation Costs**

The fourth independent variable is **High Commitment**. While the first three variables are meant to capture the factors that influence firms' behavior, the **High Commitment** variable aims to reflect the senders' reputation costs of backing down from threats. While existing studies in international relations often use variables that reflect variation in political institutions (e.g. democracy vs. non-democracy) to capture these

reputation costs, I consider the content of threats to determine whether the reputation costs are high (Krustev & Morgan 2011). In the context of economic sanctions, senders are able to manipulate their language to demonstrate how committed they are to imposing sanctions. Senders may use policy statements such as “we might act” to imply other options are considered. In contrast, states also may adopt explicit language such as “we will act” to signal high levels of commitment. The idea here is that in cases where senders make high levels of commitment, they are likely to suffer from severe reputation costs of backpedaling. TIES includes a variable that measures the strength of the sender’s commitment. TIES divides the strength of commitment into three levels: weak, moderate, and strong. Weak threats suggest that if the threat fails, the sender may consider imposing sanctions as a possible option. Moderate and Strong threats suggest that if the target fails to alter a policy behavior, the sender will consider or impose sanctions as a response. I consider the sender committed if the sender made either moderate or strong statements when they threatened the target.

Furthermore, Hypothesis 2.2.2 suggests that the relationship between sanctions imposition and the probability of firms getting caught should be conditional on the senders’ reputation costs. This means that the effects of **Effective Bureaucracy** and **Distance** on the chance that sanctions are imposed should depend on **High Commit-**

ment. To this end, two interactive terms, **Effective Bureaucracy**×**High Commitment** and **Distance**×**High Commitment** are included in the statistical analyses.

### **Value of Trade**

The fifth independent variable is **Trade Dependence**. The logic behind this variable lies in the argument that targets value trade with senders as the amount of the trade increases. This variable is measured as the proportion of the volume of sender-target trade over the target's GDP from the year before sanctions started. To construct this variable, data on countries' GDP and bilateral trade volumes are drawn from Gleditsch (2002). Because the data are highly skewed, the natural log of the variable is used for the analyses. All things being equal, higher target trade dependence should increase the chance that a threat succeeds, decrease the chance that sanctions are imposed, and increase the chance that imposed sanctions succeed.

## **4.3 Empirical Results**

### **Threat Success**

The empirical results pertaining to Hypotheses 2.1.1 - 2.1.3 are summarized in Figure 4.1. I find strong support for the hypotheses. Concerning Hypothesis 2.1.1, the coefficients of the **Effective Bureaucracy** and **Distance** are positive as predicted

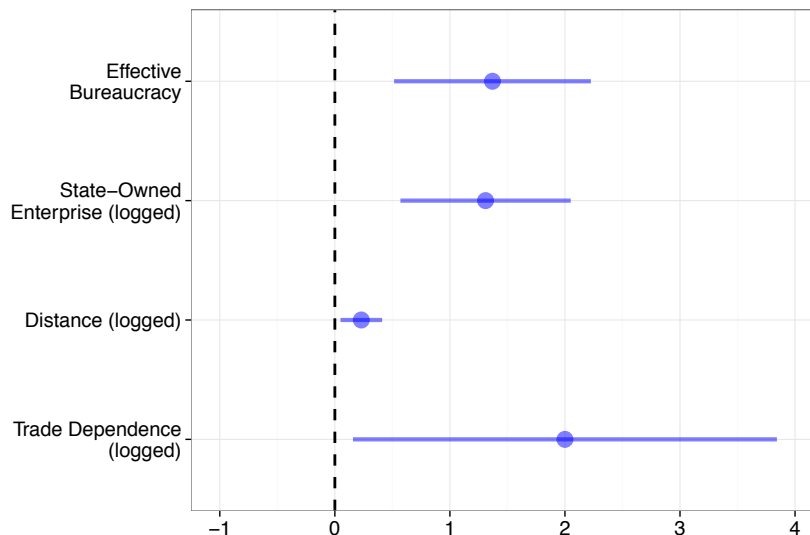


Figure 4.1 : **Coefficients from Probit Regression of Threat Success:** The graph shows the regression coefficients from the estimated model ( $N = 319$ ). Circles show the point estimates, and horizontal line segments associated with circles show the 95% confidence intervals. The coefficient on the intercept is omitted.

and statistically significant. This finding implies that threats are more likely to succeed in changing target's policy when the likelihood that firms get caught for non-compliance is high. Concerning Hypothesis 2.1.2, the coefficient of the **State-Owned Enterprise** variable is positive and statistically significant. This implies that as the sender's firms care more about the policy sought by their government, threats are more likely to succeed. The coefficient of the **Trade Dependence** variable is also positive and statistically significant as predicted. This finding supports Hypothesis 2.1.3, suggesting that the probability of successful threats increases as its trade with

the sender becomes more important for the target.

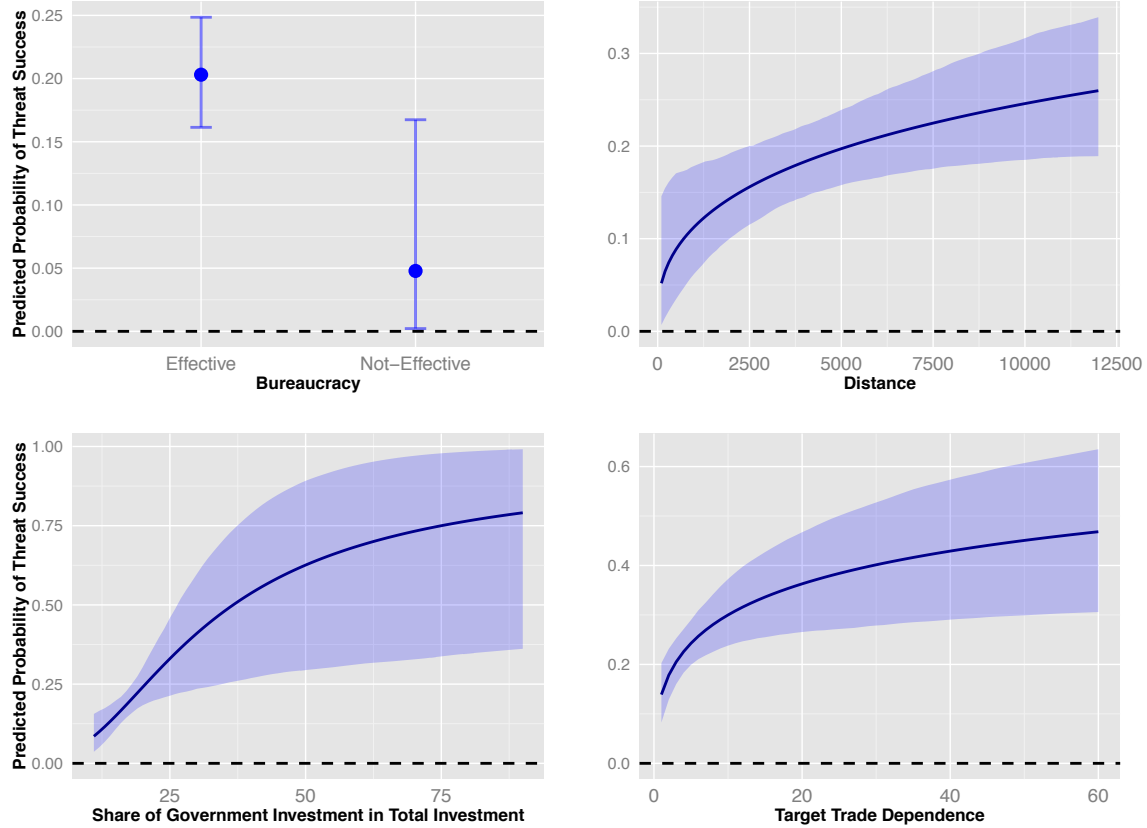


Figure 4.2 : **Predicted Substantive Effects on the Probability of Threat Success:** Each panel presents the 95% confidence band of the effect of each respective variable on the probability that a threat succeeds. The 95% confidence interval at each incremental step is based on 1,000 simulations. All other variables are held at their medians.

Examining the substantive effects of the variables not only confirms the conclusions that have been drawn so far, but also sheds light on the magnitudes of these

effects. The four panels in Figure 4.2 represent the effects of each independent variable on the predicted probability of threat success. The top-left panel suggests that having an effective bureaucracy increases the baseline probability of threat success by about 16%, on average. This effect is strikingly strong, as are the effects of other variables in this figure. In the top-right panel, the effect of distance is a steady increase in the probability of interest, suggesting that threats against targets that are far away are more likely to succeed. In the bottom-left panel, the effect of the share of state-owned enterprise increases rapidly in the range between 10% and 40% and slowly increases beyond that. In the bottom-right panel, again, the effect of target trade dependence increases rapidly from 0 to 10, suggesting that targets who depend on trade with the sender are more likely to give in to demands by the sender.

### **Impositions of Sanctions**

The results pertaining to Hypotheses 2.2.1 - 2.2.4 are reported in Figure 4.3. The results here largely support the predictions from the theoretical model. The specification in Model 1 reported includes **Effective Bureaucracy**, **Distance**, **Trade Dependence**, and **High Commitment** to consider the unconditional effects of these variables. In the figure, the coefficient for effective bureaucracy is negative and statistically significant as predicated. However, the coefficient for distance is slightly positive, which is not



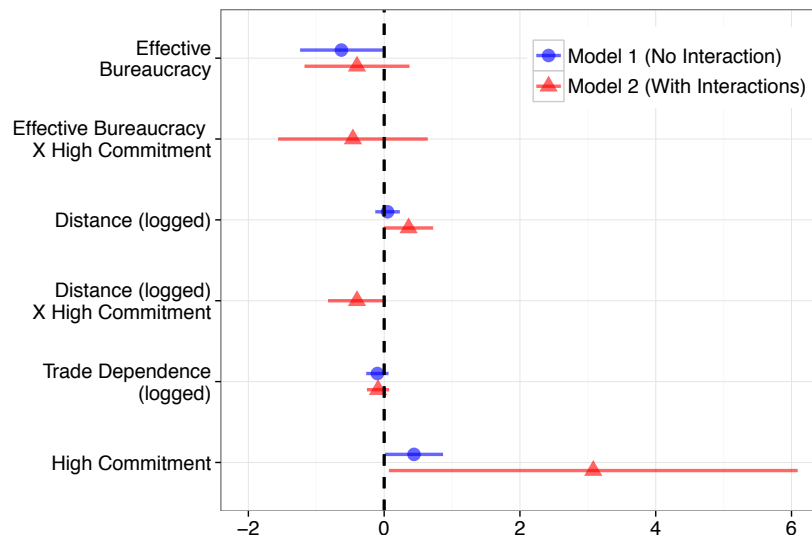


Figure 4.3 : **Coefficients from Probit Regressions of Sanctions Imposition:** The graph shows the regression coefficients from two estimated models ( $N = 229$ ) with two separate specifications: one without interactive terms (Model 1) and the other with interactive terms (Model 2). Circles and triangles show the point estimates, and horizontal line segments associated with each show the 95% confidence intervals. The coefficient on the intercept is omitted.

consistent with Hypothesis 2.2.1, but it is very far from statistical significance. The coefficient for the **Trade Dependence** variable is negative and it is in the predicted direction, but fails to reach the conventional level of statistical significance. Finally, the effect of high commitment is positive and statistically significant, suggesting that when threats are made with high commitment to impose sanctions, sanctions are more likely to be imposed.

Figure 4.4 represents the substantive effects of each variable on the predicted

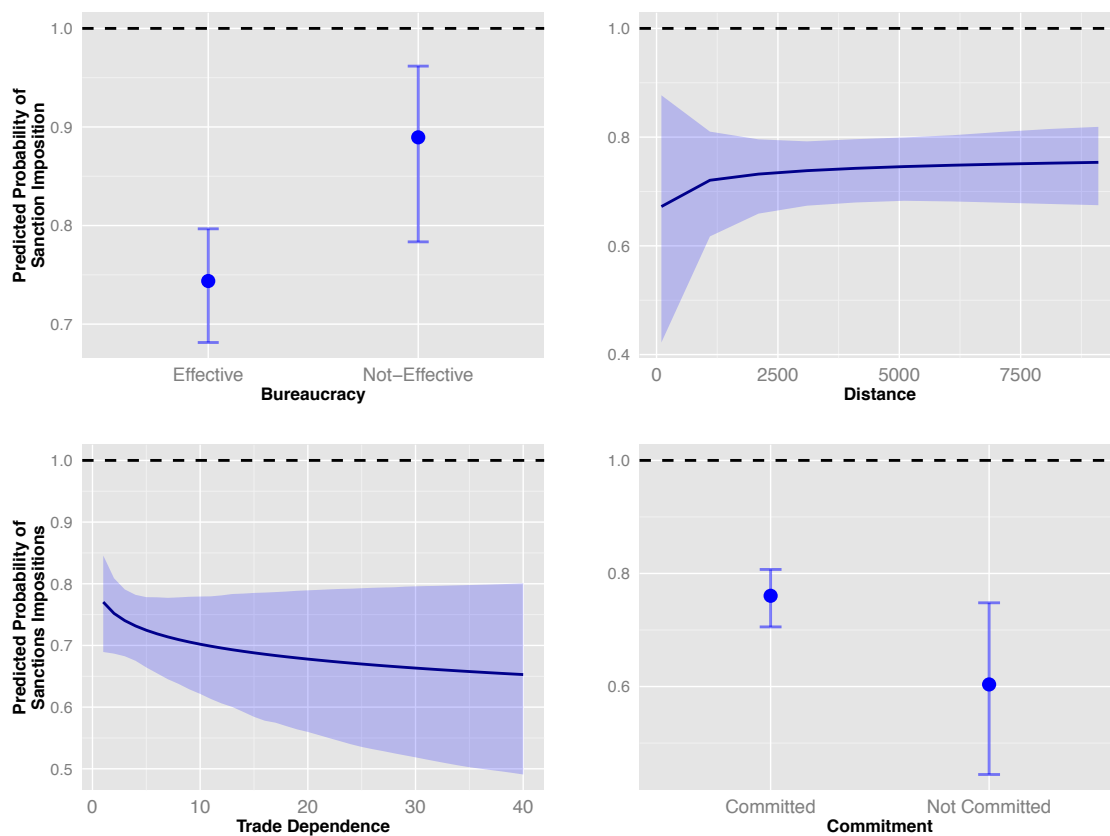


Figure 4.4 : **Predicted Substantive Effects on the Probability of Sanctions Imposition:** Each panel presents the 95% confidence band of the effect of each respective variable on the probability that a sanction is imposed. The 95% confidence interval at each incremental step is based on 1,000 simulations. All other variables are held at their medians.

probability that sanctions are imposed. The top-left panel confirms my earlier finding, suggesting that when the sender has an effective bureaucracy, he is about 15% less likely to impose sanctions given threats have failed. The top-right panel con-

firm the earlier finding that there seems to be no systematic relationship between the sender-target distance and the probability of impositions. In Figure 4, the coefficient of the trade dependence variable was not significant; but, the bottom-right panel suggests that though the relationship is weak, a 10% increase in target trade dependence (which is roughly a standard deviation in my sample) decreases the chance that the sender imposes sanctions by 10%, which is substantively significant. Finally, the bottom-right panel shows that when the sender demonstrates a high level of commitment in making threats, the sender is 15% more likely to impose sanctions as predicted.

Concerning the conditional effects of two variables, **Effective Bureaucracy** and **Distance**, on **High Commitment**, the results in Figure 4.3 appear somewhat mixed. According to the theory, the sender governments are forced to make decisions to impose sanctions when reputation costs are high. So, we expect two variables, **Effective Bureaucracy** and **Distance**, to affect the senders' decisions only when senders have made a strong commitment to impose sanctions. The coefficients on both **Effective Bureaucracy** and the interaction between **Effective Bureaucracy** and **High Commitment** are negative. This suggests that whether or not the sender has an effective bureaucracy has a stronger, negative effect on sender willingness to impose sanctions when he makes a stronger commitment. This interaction is in the predicted

direction, but is not statistically significant. Similarly, the coefficient on **Distance** is positive and the interaction is negative, but neither is statically significant. With non-linear models with interactions at hand, it is difficult to determine when the actual effects of variables are positive, negative, or indistinguishable from zero despite their estimated coefficients. To interpret these conditional results fully, I calculated the substantive effects of **Effective Bureaucracy** and **Distance** at different values of the **High Commitment** variable. More specifically, for the **Effective Bureaucracy** variable, I simulate  $\Pr(\text{Imposition} = 1 | \text{Effective Bureaucracy} = 1) - \Pr(\text{Imposition} = 1 | \text{Effective Bureaucracy} = 0)$  as I set **High Commitment** at either 0 or 1, holding all other variables at their medians. Similarly, I simulate  $\Pr(\text{Imposition} = 1 | \text{Distance} = \text{mean} + \text{one s.d.}) - \Pr(\text{Imposition} = 1 | \text{Distance} = \text{mean})$  for each value that **High Commitment** can take. Positive marginal effects mean that the variable has a positive impact on the probability of sanctions impositions while negative marginal effects mean the opposite.

Figure 4.5 indicates how the marginal effects of two independent variables change when threats are made with different levels of commitment. In the left panel, we see that when the commitment level is high, the marginal effect of **Effective Bureaucracy** is negative, meaning that senders with effective bureaucracies are less likely to impose sanctions. This effect is distinguishable from zero. When the commitment level

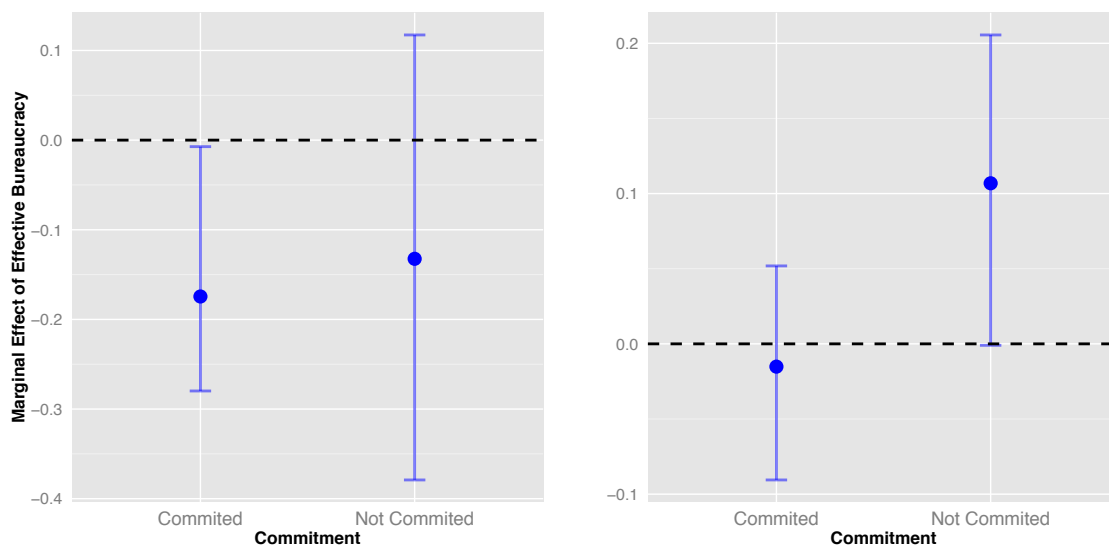


Figure 4.5 : **Marginal Effects of Effective Bureaucracy and Distance by Levels of Commitment:** Each panel presents the 95% confidence band of the marginal effect of each respective variable on the probability that a sanction is imposed. The 95% confidence interval at each incremental step is based on 1,000 simulations. All other variables are held at their medians.

is low, the marginal effect of the variable is still negative, but the confidence interval crosses the zero line, suggesting that the relationship is very weak. These findings support the prediction that when the reputation cost is high, the influence of bureaucratic effectiveness becomes stronger. In the right panel, while the effect of distance is negative when the commitment level is high, this effect is indistinguishable from zero, suggesting that the relationship is quite weak. When the commitment level is low, the marginal effect of distance appears positive, which indicates that the sender

is more likely to impose sanctions when the target is far away. Though the interactive effect is in the predicted direction in that the marginal effect of distance becomes more negative as the commitment level becomes higher, my finding that longer distance increases the chance that the sender imposes sanctions is not consistent with my theory.

In sum, I find mixed evidence concerning the effect of sender-target distance on senders' decisions to impose sanctions. However, my results also exhibit significant results for my predictions about the effects of senders' bureaucratic quality and strong commitment on the probability that they will impose sanctions. Moreover, I find evidence for the interactive effect between these two variables.

### **Success of Imposed Sanctions**

The results pertaining to Hypotheses 2.3.1 - 2.3.3 are reported in Figure 4.6. The results indicate that my theory is on the right track. The estimated coefficient for effective bureaucracy is positive, suggesting that when the sender's bureaucracy is effective, imposed sanctions are more likely to be successful; but it fails to meet the conventional level of statistical significance. The effect of sender-target distance is again in the predicted direction, but it is far from statistical significance. The effect of the **State-Owned Enterprise** variable is positive and statistically significant, which

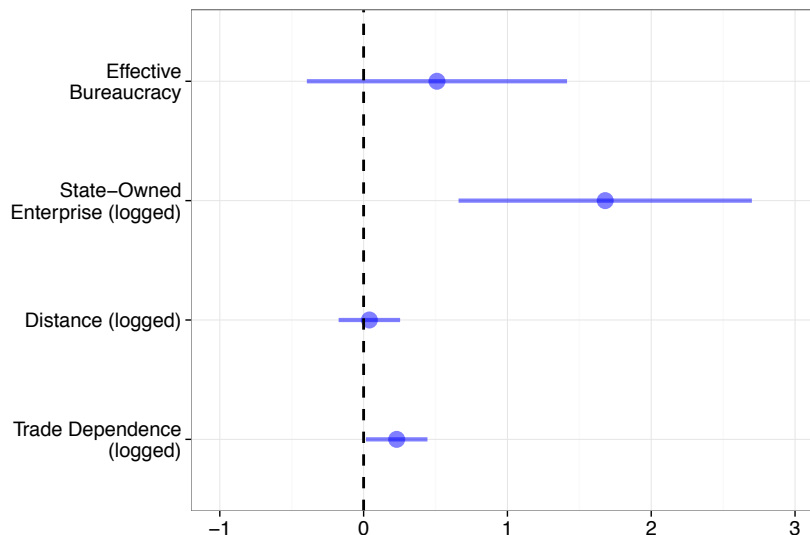


Figure 4.6 : **Coefficients from Probit Regression of Sanctions Success:** The graph shows the regression coefficients from the estimated model ( $N = 119$ ). Circles show the point estimates, and horizontal line segments associated with circles show the 95% confidence intervals. The coefficient on the intercept is omitted.

suggests that when state-owned enterprises represent a large share of the sender government investment, sanctions are more likely to succeed. Finally, the coefficient for the **Trade Dependence** variable is positive and significant.

All together, the results concerning the success of imposed sanctions may not appear strongly supportive; however, this is not very surprising from empirical or theoretical perspectives. First, the number of cases in this particular analysis is only 119. With this small number of observations, it may be hard to find results that are statistically significant. Second, the theory provides an explanation for these

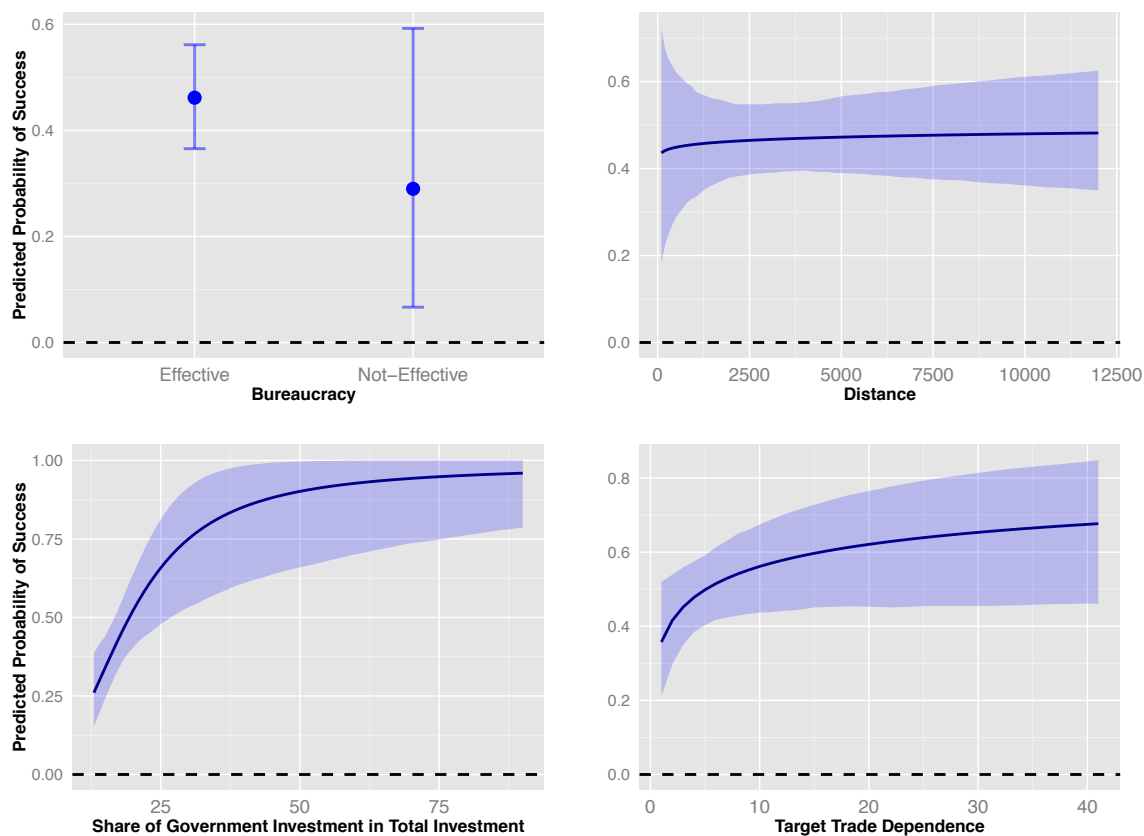


Figure 4.7 : **Predicted Substantive Effects on the Probability that Imposed Sanctions Succeed:** Each panel presents the 95% confidence band of the effect of each respective variable on the probability that an imposed sanction succeeds. The 95% confidence interval at each incremental step is based on 1,000 simulations. All other variables are held at their medians.

seemingly weak results. Recall that, in the model, governments incorporate their expectations about the behavior of firms into their decisions at stages prior to sanctions impositions. This is why the success of threats were found to be systematically



related to the factors identified in the model. Consequently, the theory suggests that much ‘action’ takes place prior to impositions. Thus, the behavior of firms should not have particularly strong effects on the target’s decisions at the last stage of the game. In light of these insights, the findings that the estimated effects all went in the expected directions strongly support the model.

Instead, it is rather surprising that I find strong effects for some variables, given what the theory predicts. For example, consider the substantive effect of the state-owned enterprise variable in Figure 4.7. I find that sanctions imposed by a government which spends 40% of its total investment on state-owned enterprise are about four times more likely to succeed than those by a government which spends only 10%. This effect of state-owned enterprises is much stronger than the one I find in the analysis of threats success. These findings together point to an interesting possibility: some target governments may not take into account the degree of state-owned corporations in senders’ territories when making decisions at the threat stage. Theoretically, it is puzzling why the target governments would fail to incorporate such information into decision making, but the findings here suggest that the consequence of failing to consider this factor at the threat stage can be quite detrimental on the part of targets.

## 4.4 Conclusion

This chapter presented a series of empirical tests of the game-theoretic model advanced in Chapter 2. The first set of tested hypotheses, stating that threats are more successful when firms see higher risk in violating sanction policies and care about foreign policy outcomes, have been strongly supported by the data. First, threats initiated by senders with effective bureaucracies were found to be more successful. Second, threats were found to be more likely to succeed as the number of firms involved in sender-target trade decreased. Third, it was found that threats are more successful if the sender governments own more of their firms.

The second set of hypotheses have enjoyed partial support. One hypothesis stated that the senders are more likely to impose sanctions when the firms do not see it risky to evade sanctions. The support for this hypothesis was partial, as while the senders' bureaucratic quality measure had strong, significant effects as expected, the effect of the distance measure was found to be insignificant. On the other hand, I found strong support for another hypothesis, stating that there are reputation costs associated with the senders more likely to impose sanctions when backing down from their own threats.

The third set of analyses have provided support for several hypotheses. This set of hypotheses stated that imposed sanctions are more successful when the firms see high

risk in evading sanctions and care about policy outcomes. First, the bureaucratic quality and distance variables had effects in the expected directions, but these effects were not very strong. This is in fact theoretically justified. Due to the target's strategic, forward-looking considerations, the theory implied that the effects of these variables should not be strong. However, surprisingly, the state-owned enterprise variable had a very strong effect on the success of imposed sanctions.

In sum, this chapter presents fairly strong support for the model, especially given that some of these non-intuitive implications seem to be supported. Combined with the empirical findings in Chapter 3, which confirmed the mediating effect of firms on the carrying out of sanction policies, the findings here suggest that states do not make decisions with an expectation that sanctions automatically generate economic harm against the target. Rather they do so by anticipating and evaluating how enforcement may affect compliance decisions by firms. Therefore, the central conclusion emerging from this analysis is that a complete understanding of economic sanctions requires an inclusion of sanction enforcement as part of the whole sanction process.

## Chapter 5

# Enforcement Problem and the Design of Economic Sanctions: Unilateralism vs. Multilateralism

### 5.1 Introduction

In the previous three chapters, I presented my main theoretical framework and statistical analyses of some of the hypotheses derived from the theory. I focused on how the enforcement of sanctions policies and firms' compliance behavior influence governments' decisions during the sanctions processes, such as a sender's decision to impose sanctions and a target's decision to give into the sender's demand. The empirical results were generally supportive of the theory. However, the theoretical as well as empirical investigations in the previous chapters overlook one important aspect of economic sanctions: the design of economic sanctions. The theory presented in Chapter 2 focused on a particular scenario in which sanctions can be imposed by one sender, that is, sanctions are *unilateral*. For example, the theory shows that when firms are anticipated to evade sanction policies, the sender is more likely to impose *unilateral* sanctions. However, one interesting political problem, and per-

haps the most heated debated, has to do with whether or not to pursue multilateral sanctions. In this chapter, I analyze the sender's decision to sanction multilaterally rather than unilaterally.

At first glance, it may seem that states should always want to sanction multilaterally. There is a widespread belief among policymakers that multilateral support is crucial to coerce other states to change their policy behavior. Some go so far as to claim that U.S. unilateral sanctions have never worked and sanctions can only be effective if they are applied multilaterally. Multilateral sanctions are believed to be more effective because they should impose greater costs on the target by disrupting more trade to the target and because multilateral efforts should make it more difficult for the target to find alternative markets and suppliers in the international system. In addition, greater numbers of countries and institutions supporting a sanctions effort may increase its capacity for moral suasion. This optimistic belief about multilateral efforts was so strong among scholars that many did not question its validity. For example, Gilpin (1984) states "Whereas positive leverage is usually a unilateral action, negative leverage in almost all cases must be multilateral. To be effective, other states must give it their support" (639). These proponents of multilateral sanctions also point out unilateral sanctions are not attractive because they inevitably hurt the sender's domestic economy and possibly cause long-term

harm to the companies that do business with foreign nations (e.g. Hufbauer, Schott & Elliott 1990, Hufbauer et al. 1997).

Despite its apparent advantages, however, states often do not sanction multilaterally. Even more puzzling is that sanctions scholars have found mixed evidence concerning the effect of multilateral cooperation on the effectiveness of sanctions. Some find that unilateral sanctions are actually more effective than unilateral sanctions (Lam 1990, Bonetti 1998, Dehejia & Wood 1992, van Bergeijk 1994, Hufbauer, Schott & Elliott 1990), while other find multilateral sanctions may be more effective than unilateral sanctions (Morgan, Bapat & Krustev 2009, Bapat & Morgan 2009, McLean & Whang 2010). These mixed conclusions suggest that, in order to understand how different forms of sanctions affect the outcomes of sanctions, we need to first better understand states' *choices* between unilateral and multilateral sanctions.

In this chapter, I introduce a simple theoretical framework that characterizes sender states' choices between multilateral and unilateral sanctions. This theory is built on two related insights gained from looking at the enforcement aspect of economic sanctions. First, I draw on an insight from the previous chapters that, under some conditions, unilateral sanctions can succeed in changing a target's policy. In particular, when unilateral sanctions are expected to be enforced, they are more likely to change target's policy behavior. This implies that states do not always

need to resort to multilateralism in order to succeed in achieving their international objectives.

The second insight has to do with enforcement problems which are unique to the context of multilateral sanctions. The enforcement of multilateral sanctions is difficult for the primary sender because other states in a coalition may be reluctant to enforce sanctions policies or, even when they are serious about sanctions enforcement, most states lack the bureaucratic capacity and resources to enforce them. Indeed, this very problem has been proposed as the key explanation for the failure of multilateral sanctions (Martin 1993, Kaempfer & Lowenberg 1999, Drezner 2000). However, I argue that some primary senders are able to solve this problem by helping their co-senders' enforcement activities through providing them with resources and staffs, through monitoring co-senders' firms, and through sharing the information with them. This implies that states with the capacity to perform such tasks are able to impose effective multilateral sanctions, and, thereby, they are more likely to pursue sanctioning multilaterally.

My theoretical argument, again, highlights the importance of enforcement in states' choices in sanctions episodes. More specifically, a sender's choice between multilateral vs. unilateral sanctions depends crucially on the expected difficulty of enforcing the respective types of sanctions. If unilateral sanctions are expected to

be enforced, the primary sender chooses unilateral sanctions. If not, the sender is more likely to pursue multilateral sanctions, but only if they are expected to be enforceable. Consistent with my arguments, I find empirical evidence that primary senders are more likely to choose multilateralism when it is expected to be difficult to enforce unilateral sanctions. Also, I find that when the enforcement problem with multilateral sanctions can be mitigated, multilateral sanctions are chosen over unilateral sanctions.

Below, I first present my theoretical argument, which relates the enforcement problems of unilateral and multilateral sanctions to primary senders' design choices. Then, I provide two sets of empirical analyses.

## **5.2 Enforcement Problems in Multilateral Sanctions**

To be consistent with the literature, I call the sanctioning states 'senders' and sanctioned states 'targets.' In the context of multilateral sanctions, there is usually one state that is primarily responsible for mobilizing other states to impose sanctions. I refer to this state as a 'primary sender' and to the other states in a multilateral coalition as 'co-senders.'

Why don't states always pursue to impose multilateral sanctions if most policy-makers believe that they increase the chance of achieving their sought-after foreign



policy goals? To systematically analyze this question, I first discuss costs and concerns involved in building multilateral coalitions. Although existing work primarily focuses on the question of sanctions effectiveness, it provides us with some insight into this question. Broadly, prior work suggests three types of concerns about imposing sanctions multilaterally. First, because states often have different preferences on the disputed issues, including other states in a multilateral sanctioning coalition and maintaining it requires some compromises on the part of the primary sender (Miers & Morgan 2002, Bapat & Morgan 2009).

Second, because potential co-senders are often unwilling to join multilateral sanction coalitions, the primary sender must use a variety of costly measures such as threats and issue linkages to coerce them to cooperate (Martin 1993). For example, when the United States formed a coalition to impose sanctions against Iran in 1979, it persuaded Japan to join its sanctioning coalition by promising to provide Alaskan oil in exchange (Miyagawa 1992).

The third issue with multilateral sanctions has to do with the enforcement of multilateral sanctions. There is one critical difference between the enforcement of multilateral and unilateral sanctions. In the previous chapters, I discussed the problems in enforcing unilateral sanctions. The enforcement of unilateral sanctions is targeted at a sender's own domestic firms. In contrast, the enforcement of multilat-

eral sanctions concerns other states (e.g. co-senders) as well as their firms. Because coalition members are in charge of the enforcement of their own sanction policies, the primary sender has to make sure the co-senders' sanction policies are enforced and their firms are deterred from continuing trade with the target.

This is problematic for the primary sender, who wants to ensure that co-senders' sanctions are enforced vigorously, for two reasons. First, co-senders are often reluctant to enforce sanctions even when they agree to impose sanctions with the primary sender (Kaempfer & Lowenberg 1999). This is because strict enforcement of sanction policies would lead to a loss of trade. Second, even when co-senders are actually willing to enforce sanctions, they may not be capable of effectively doing so, which leads to their domestic firms evading sanctions policies.

To solve this problem, the primary sender can use a variety of means to ensure that co-senders' sanctions are enforced. In cases in which co-senders are willing to enforce sanctions, there are three mechanisms through which primary senders can help them enforce their sanction policies. The first mechanism is to provide financial resources and technical support for sanction enforcement. For example, when U.N. sanctions were imposed against Yugoslavia in 1992, policy makers soon became concerned about the lack of enforcement capacity by the countries surrounding Yugoslavia, which became transshipment hubs for foreign firms that traded with

Yugoslavia (Garfield 2001). In response, the United States provided these neighboring countries with financial as well as technical support specifically to enforce sanctions. This concern also led the United States, European states, and Canada to organize a network of sanctions assistance missions (SAMs), through which their customs officials were dispatched at border posts (Cortright & Lopez 2002). These missions were coordinated via a Sanctions Assistance Missions Communications Center (SAMCOMM), which was equipped with computerized satellite communication systems that made it easier for customs officials to verify documents. This network of strict enforcement made it costly for foreign firms to trade with Yugoslavia. According to one UN report, the SAMs contributed to a great reduction of transshipments through these neighboring countries and made the sanctions “the most effective of the post-Cold War sanctions regimes.” (Garfield 2001: 64).

The second mechanism is information-sharing. Information is critical for effective enforcement of sanctions, but collecting reliable information requires a significant amount of time, effort, and expertise on the part of enforcement agencies. In many violation cases, a lack of information leads to dismissals of sanctions violations cases because they cannot prove that violations actually occurred. The primary sender can help by sharing information about firms who violate the other co-senders’ sanctions. For example, in late 1986, when it became known to the Japanese government that

its firm, Toshiba Machine, violated the CoCom export control rules, the Japanese government first dismissed this case because reliable information was not available. Later on, evidence for this case was provided by the United States officials, which led the Japanese government to take action against the firm (Bertsch 1988).<sup>1</sup>

The third mechanism through which the primary sender can facilitate sanctions enforcement is by making it physically difficult for firms to ship goods to the target or transship them through other locations. Primary senders could even resort to military means to enhance sanctions enforcement. This was what the United Kingdom did in the case of U.N. sanctions against Rhodesia. One serious problem in this case was the circumvention of the oil embargo through Rhodesia's neighboring countries. In particular, knowing that Mozambique lacked a sufficient enforcement capacity, many foreign firms continued shipping oil to Rhodesian refineries through Beira, a port of Mozambique. Being frustrated with the situation, Britain decided to help enforcing the sanction by stationing two frigates off Beira. The primary task for these frigates was to interdict oil tankers approaching Beira (Mobley 2002).<sup>2</sup> From

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<sup>1</sup> "Shock Waves from Toshiba-Soviet Deal still Rattle Japan," *Los Angeles Times*, 11 August 1987, [http://articles.latimes.com/1987-08-11/business/fi-659\\_1-soviet-union](http://articles.latimes.com/1987-08-11/business/fi-659_1-soviet-union).

<sup>2</sup> This blockade effort initially proved to be somewhat inefficient because Britain was required to obtain permission from the tankers' flag states to stop them. Shortly after the start of the blockade, Britain was granted authority, under UN Resolution 221, to undertake maritime interception operations off Beira. After the passage of Resolution 221, Britain no longer needed permission from the tankers' flag states for interceptions, which made their operations more efficient.

1966 to 1971, the naval force was reported to have intercepted forty-seven oil tankers (Mobley 2002). By blocking the primary route for evading sanctions, the blockade by the UK contributed to the effectiveness of sanctions enforcement.

These mechanisms are often useful in ensuring that co-senders' sanctions are enforced if the co-senders are willing to enforce sanctions but are not capable of doing so effectively. What if the co-senders are reluctant to enforce sanctions in the first place? The primary sender must offer co-senders an incentive to enforce sanctions. One way to do so is by threatening sanctions against them or by directly sanctioning their firms (Shambaugh 1999). For example, in May 1982, the United States fined International Computers Limited (ICL) of Great Britain for violating the CoCom export control regulations and threatened to place it on the U.S. Export Denial Lists.

This variety of mechanisms through which the primary sender ensures strict enforcement of multilateral sanctions requires a substantial amount of resources as well as its capability to implement them. Clearly, to provide financial resources to increase a co-sender's ability to enforce sanctions, the primary sender needs resources. All of the other mechanisms require resources because collecting information about foreign firms' behavior, erecting physical blockades, and threatening and imposing sanctions against foreign firms for their non-cooperation are all costly measures.

Second, what is also crucial here is the primary sender's ability to implement each measure. Providing technical support presupposes that the primary sender already has competent, well-trained staff in the implementation of sanctions as well as institutionalized procedures for doing so. Similarly, collecting information as well as blocking a smuggling network requires such a capability.

So far, I have discussed the costs and concerns associated with forming and maintaining effective multilateral coalitions by highlighting the issues with implementation of multilateral sanctions. In contrast to existing work, which claims that the enforcement problem undermines the effectiveness of multilateral sanctions, I have argued here that the primary sender often aims to solve this problem by coordinating the enforcement of multilateral sanctions. This discussion suggests that the primary sender's financial as well as technical abilities to enforce multilateral sanctions are important in forming and maintaining effective multilateral coalitions. Below, based on these insights, I will move on to discuss how primary senders decide to form a multilateral sanctioning coalition.

### **5.3 Multilateralism vs. Unilateralism**

The primary sender's choice between multilateral and unilateral sanctions depends on three things: costs involved in forming a coalition, his ability to help enforce

sanctions abroad, and the target's decisions. So far, I have discussed the issues involved in imposing multilateral sanctions and sender states' ability to help enforce sanctions abroad. However, also important is the target's decisions or her anticipated response to sanctions pressure.

In a strategic context, a primary sender incorporates the target's anticipated decisions into his calculation. In a sanction episode, the target's decision is to acquiesce to the sanction pressure or to stand firm. Her decision depends on how costly sanctions are to her and how important the disputed policy is. I assume that whether or not sanctions are unilateral or multilateral does not directly influence the target's decision. In other words, what matters for the target is how costly the sanctions are, and not which state or how many states are imposing them. Given this assumption, it follows that the target is more likely to give in to sanctions pressure if they are more costly.

When deciding whether to sanction multilaterally or unilaterally, the primary sender anticipates the target's responses to both types of sanctions and choose the one that is most efficient in achieving his goal. To discuss the primary sender's choice in more detail, I consider the following two cases: 1. when unilateral sanctions are expected to be effective in coercing the target to change her policy and 2. when unilateral sanctions are expected not to be effective.

First, when the primary sender anticipates that the target will give in to unilateral sanction pressure, the primary sender always prefer unilateral sanctions to multilateral ones. In the previous section, I argue that multilateral sanctions are costly for the primary sender. The primary sender would rather not pay the cost of forming and maintaining a sanctioning coalition if unilateral sanctions suffice.

Second, when unilateral sanctions are expected not to be severe enough for the target to give in, the primary sender has the option of pursuing multilateral sanctions. His decisions depend crucially on three different kinds of costs and issues I have mentioned earlier: compromise, concessions, and the issues with enforcement. Here, I focus on the latter two. Giving concessions to gain cooperation can be expensive, but the price the primary sender needs to offer to a co-sender depends on the importance of its trade with the target and the value of rents it can extract from busting sanctions.

First, because joining multilateral coalitions and imposing sanctions means restricting its trade with the target, the offer the primary sender proposes has to compensate for the foregone trade. Thus, the more important a co-sender's trade with the target, the more expensive it becomes to form a coalition.

Second, the value of concessions the primary sender makes to the potential co-sender also has to account for the sanction rent that state could extract from busting



sanctions. Impositions of sanctions create rents for all third-party states and actors (Kaempfer & Lowenberg 1999). Any potential co-sender is also a potential sanction-buster who might replace some of the target's forgone trade caused by the primary-sender's sanctions. Given the high incentives to bust sanctions, the primary sender has to compensate its co-sender for this opportunity cost, increasing the price that the primary sender has to pay to the potential co-sender.

The primary sender's decision to pursue sanctions multilaterally is also influenced by the issues with enforcing multilateral sanctions. The primary sender may pay enough in concessions so that other states join the coalition, but he also has to make sure that the co-senders enforce sanctions strictly. Thus, whether or not the primary sender pursues multilateral sanctions depends on his ability to enforce sanctions abroad.

This discussion leads to the central theoretical result. That is, the primary sender is more likely to pursue multilateral sanctions if he anticipates that unilateral sanctions will not change the target's policy, cooperation from the potential co-senders is cheap to buy, and he has the ability to make sure that sanctions by co-senders are enforced. Based on this key result, I derive several testable hypotheses, which I subject to empirical tests in later sections.

The primary sender is more likely to sanction multilaterally if unilateral sanc-

tions are expected not to work. In the previous chapters, I argued and provided evidence that, under certain conditions, unilateral sanctions can actually be effective in changing the target's behavior in the sender's favor. One such condition is when the target cares about the trade relationship with the sender sufficiently more compared to its disputed policy. If her trade with the sender is so important that unilateral sanctions will change her policy behavior, then the primary sender would not pursue rather costly multilateral sanctions. This leads to the first hypothesis:

**Hypothesis 5.1** *All else equal, as the target cares more about the primary sender-target trade relationship, the primary sender is less likely to choose multilateral sanctions over unilateral sanctions.*

Another condition under which unilateral sanctions are likely to work is when the target anticipates the primary senders' firms' compliance with sanction policies (i.e. enforcement of unilateral sanctions is not difficult). For example, I find that when the number of firms is small in the sender-target trade, the sender government has an easy time enforcing unilateral sanctions and thereby the target is more likely to give into the demand. Thus, if the enforcement of unilateral sanctions is expected to be less challenging, the primary sender is less likely to pursue multilateral sanctions. This insight also leads to another observable implication. If sanctions are multilateral, then sanctions by the primary sender should be enforced less effectively than if

sanctions were unilateral.

**Hypothesis 5.2** *All else equal, as the enforcement of unilateral sanctions against the target becomes more difficult, the primary sender is more likely to choose multilateral sanctions over unilateral sanctions.*

**Hypothesis 5.3** *Primary sender's sanctions are enforced less effectively when they are imposed multilaterally than when they are imposed unilaterally.*

The main result also suggests that the primary sender is more likely to sanction multilaterally if the cost of making concessions to the co-senders is low. This, in turn, suggests that wealthy states should be able to pursue multilateral sanctions because they have an easier time buying off other states to join multilateral sanctioning coalitions. This leads to the following hypothesis:

**Hypothesis 5.4** *All else equal, the primary sender is more likely to choose multilateral sanctions over unilateral sanctions as his wealth increases.*

Lastly, the primary sender is more likely to pursue multilateral sanctions if he has the ability to help enforce sanctions abroad. The primary sender can employ a variety of mechanisms to make sure the enforcement of sanctions is sufficient. One important factor determining the primary sender's ability to help enforce sanctions is his wealth. Because providing financial resources and deploying troops to physically

blockade smuggling networks requires a significant amount of resources, wealthy primary senders are expected to pursue multilateral sanctions when they like to, which leads to the same implication expressed in Hypothesis 5.4. However, the primary sender's enforcement ability also depends on other factors, such as the competency of his bureaucratic agencies or enforcement staff. The primary sender with existing competent and skilled enforcement experts can send them to co-senders who need specific knowledge and skills to enforce sanctions effectively. These existing, effective bureaucrats and expertise are also useful in collecting and sharing information with their counterparts in co-sender states, which facilitates the effectiveness of enforcement. This discussion leads to the following hypothesis:

**Hypothesis 5.5** *All else equal, the primary sender is more likely to choose multilateral sanctions over unilateral sanctions if he has an effective bureaucracy than if he does not.*

## 5.4 Empirical Analysis I

I first show a simple empirical test of Hypothesis 5.3. The hypothesis states that the levels of enforcement of primary senders' sanctions vary depending on whether they are sanctioning alone or with other states. More specifically, when sanctions are imposed unilaterally, sanctions by the primary sender are expected to depress

his trade with the target more than they would if they were imposed multilaterally. To test this hypothesis, I restrict my quantitative analysis to the cases from 1971 to 2000 in which the U.S. was the primary sender.<sup>3</sup> I analyze the effect of U.S. (primary sender) sanctions on its bilateral trade relationships with other countries. The unit of analysis for examination is a country in a given year, or country-year. The dependent variable for this analysis is the natural log of U.S. bilateral trade with country  $j$  in year  $t$  ( $\ln(\text{US Trade})_{jt}$ ). The data on bilateral trade were obtained from Gleditsch (2002) and deflated to 2000 U.S. dollars using the U.S. Consumer Price Index.<sup>4</sup>

I use the TIES data set (Morgan, Bapat & Krustev 2009) to identify sanctions episodes in which the U.S. was a primary sender.<sup>5</sup> I use four additional decision rules to restrict the sample of sanctions. First, because my argument addresses the effect of *imposed* sanctions, rather than *threats*, I excluded all the episodes in which sanctions were not imposed. Second, because my argument considers the effects of

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<sup>3</sup> I only analyze the U.S. cases here because including different primary-senders in a sample would introduce heterogeneity in the primary-sender sample, which makes it difficult to interpret results. U.S. cases are the most ideal because the U.S. imposed many unilateral and multilateral sanctions—a total of 345 between 1971 and 2000, 43 of which were multilateral. Other countries either have not imposed many sanctions or focused on either sanctioning unilaterally or multilaterally.

<sup>4</sup> U.S. Bureau of Labor Statistics: [www.bls.gov/cpi/](http://www.bls.gov/cpi/).

<sup>5</sup> The primary sender is defined as a state that “proposes sanctions, initiates the threat, or is responsible for mobilizing other states to initiate sanctions.” (TIES Codebook: <http://www.unc.edu/~bapat/Codebook.pdf>).

trade sanctions, I exclude non-trade sanctions such as termination of foreign aid, asset freezes, and travel bans. Third, to preserve the similarities in the severity of the actual sanctions policies between unilateral and multilateral sanctions, I include only cases where issues were security-related. This is because sanction policies tend to be more modest in cases with disputed issues related to environmental or trade practices in comparison to cases where issues are security-related. In addition, cases over trade and environmental issues rarely become multilateral in general and the U.S. has never had such a case. Fourth, I exclude sanction cases that did not last longer than three months. Using these decision rules, the data set contains 46 sanctions episodes (186 sanction-years) between 1971 and 2000.

Using these U.S. sanction cases, I first construct my key independent variables. In order to see whether a sanction has any impact on U.S. trade with the target, I code whether or not there was a U.S. sanction against the country in time period  $t$  (**Sanction<sub>jt</sub>**).<sup>6</sup> To investigate whether U.S. sanctions are enforced more effectively when they are unilateral rather than multilateral, I code whether or not there was a U.S. multilateral sanction against the country in time period  $t$  (**Multilateral<sub>jt</sub>**). Using information about additional senders in TIES, I code a sanction as multilateral when states other than the U.S. were involved in a sanction effort. According to my

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<sup>6</sup> In addition, I adopted the principle that, for a particular country-year to be coded 1, a sanction had to be in place for longer than ten months. In other words, if a sanction started after November 1st or ended before March 1st in a given year, that country-year would be coded 0.

argument, U.S. sanctions will be negatively related to U.S. trade with a country, and this impact of sanctions will be smaller if sanctions become multilateral.

To estimate the effect of sanctions on bilateral trade, I again use the gravity model of international trade. I specify the gravity model in the following way:

$$\begin{aligned}
 \ln(\text{US Trade})_{j,t} = & \alpha_0 + \alpha_t + \beta_0 \text{Sanction}_{j,t} + \beta_1 \text{Multilateral}_{j,t} + \beta_2 \text{Institution}_{j,t} + \\
 & \beta_3 \ln(\text{Distance})_{US,j} + \beta_4 \ln(\text{GDP})_{US,t} + \beta_5 \ln(\text{GDP})_{j,t} + \\
 & \beta_6 \ln(\text{Pop})_{US,t} + \beta_7 \ln(\text{Pop})_{j,t} + \beta_8 \text{Dem}_{US,t} + \beta_9 \text{Dem}_{j,t} + \\
 & \beta_{10} \text{Defense}_{US,j,t} + \epsilon_{i,j,t}
 \end{aligned} \tag{5.1}$$

$\ln(\text{Distance})_{i,j}$  denotes the natural log of the capital-capital distance between country  $i$  and country  $j$ . This variable is included in the gravity model to capture the idea of transaction costs in trading activities. As the distance between two countries increases, transaction costs involved in trade should increase; thus, I expect the distance variable to be negatively related to total trade between these two countries. The data on distance was obtained from Stinnett, Tir, Diehl, Schafer & Gochman (2002).  $\ln(\text{GDP})_{i,t}$  is the natural log of the gross domestic product (GDP) of country  $i$  in time period  $t$ . This variable is used to proxy the size of the nation's economy within the gravity model. Thus, this GDP variables should be positively related to total trade. The data are obtained from Gleditsch (2002).  $\ln(\text{Pop})_{j,t}$  denotes the

natural log of the population of country  $i$  in time period  $t$ . In the gravity framework, this variable represents the size of the nation's market. I expect this population variable to be positively associated with total trade. The data on populations are also obtained from Gleditsch (2002).  $\text{Dem}_{i,t}$  is a dummy variable that takes a value of 1 if country  $i$  is a democracy. This variable is coded 1 if country  $i$  scores six or higher on the Polity IV democracy scale (Marshall & Jaggers 2005). I expect these democracy variables to be positively related to total trade.  $\text{Defense}_{i,j,t}$  is a dummy variable that is coded 1 if a pair of countries has a defense pact with one another. The data I use to code this variable is from the ATOP dataset (Leeds, Ritter, Mitchell & Long 2002). I expect the defense pact variable to be positively related to total trade (e.g. Long 2003). To account for heterogeneity across time, I have included year dummy variables. Similarly, I also include, in some models, country-specific dummy variables (for the U.S. trade analyses) to account for heterogeneity across U.S. trading partners (e.g. Tomz, Goldstein & Rivers 2007).

## Empirical Results I

Table 5.1 presents results from my analysis of U.S. bilateral trade with other states. Models 1 and 2 are pooled-OLS regressions whereas Models 3 and 4 control for country-specific effects. As was expected, U.S. sanctions in general appear to reduce



trade between the U.S. and its targets. In Models 1 and 3, which include U.S. sanctions variables as well as other control variables, the negative coefficient on U.S. sanctions indicate reduction in trade between the U.S. and its sanction target. When U.S. sanctions are multilateral, U.S. trade with the target does not decrease as much as it would if they were imposed unilaterally. This is shown by the positive coefficient on the Multilateral variable in Models 2 and 4.

To demonstrate these findings more clearly, I simulated the percentage changes in U.S. trade due to a sanction using Model 4. In Figure 5.1, unilateral sanctions on average reduce U.S. trade with the target by 66%. But, when sanction are imposed multilaterally, the U.S. sanction does not appear to reduce as much of its trade with the target as it would if sanctions were unilateral.

These findings are consistent with my theoretical argument. When sanctions are imposed multilaterally, they are not enforced as strictly as they would be if they were imposed unilaterally. This evidence is consistent with the argument that primary senders choose multilateral sanctions when the enforcement of unilateral sanctions is expected to be difficult.

Table 5.1 : **Analysis of U.S. Trade Levels**

	Model 1	Model 2	Model 3	Model 4
Sanction <sub><i>j,t</i></sub>	−2.20** (0.11)	−2.98** (0.14)	−0.95** (0.08)	−1.14** (0.11)
Multilateral <sub><i>j,t</i></sub>		1.90** (0.22)		0.39** (0.14)
ln(Distance) <sub><i>US,j</i></sub>	−0.25** (0.05)	−0.30** (0.05)		
ln(Pop) <sub><i>US,t</i></sub>	−0.12 (25.93)	−0.81 (25.71)		
ln(Pop) <sub><i>j,t</i></sub>	0.86** (0.05)	0.85** (0.05)	−0.01 (0.18)	−0.01 (0.18)
ln(GDP) <sub><i>US,t</i></sub>	0.47 (10.83)	0.69 (10.74)		
ln(GDP) <sub><i>j,t</i></sub>	1.31** (0.02)	1.33** (0.02)	1.02** (0.06)	1.02** (0.06)
Defense <sub><i>US,j,t</i></sub>	1.06** (0.06)	1.04** (0.06)	0.18 (0.11)	0.18 (0.11)
Dem <sub><i>j,t</i></sub>	0.13* (0.06)	0.12* (0.06)	0.16** (0.05)	0.16** (0.05)
Constant	−13.63 (212.12)	−7.00 (210.29)	−2.67* (1.24)	−2.70* (1.24)
Observations	4323	4323	4323	4323

Note: Coefficients of the year- and country-specific dummy variables are not reported due to space consideration.

Standard errors in parentheses.

Two-tailed tests \* $p < .05$ , \*\*  $p < .001$ .

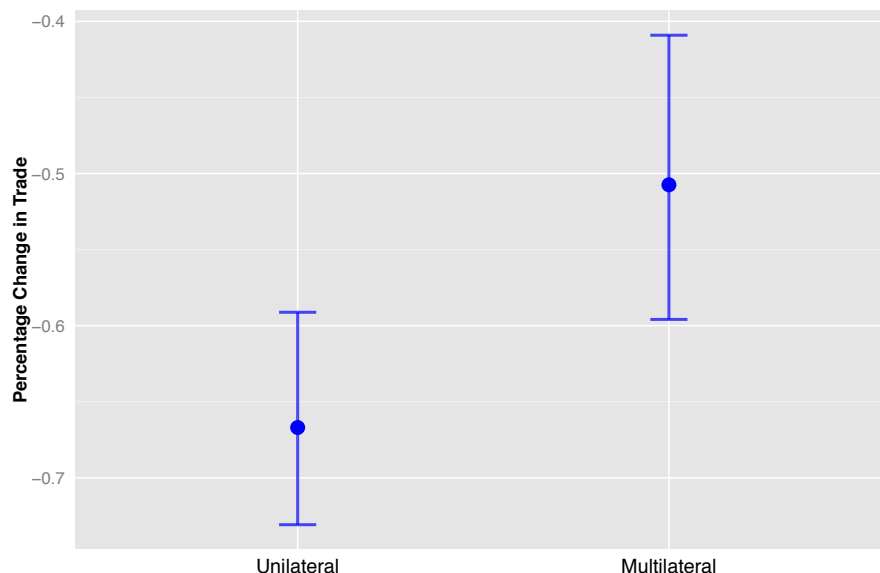


Figure 5.1 : **Percentage Changes in U.S. Trade due to Different Types of Sanctions:** The vertical axis depicts the impact of a sanction on the U.S. trade as a percentage change. Negative values represent a disruption in trade. The bars represent the 95% confidence intervals; the points represent the mean percentage change.

## 5.5 Empirical Analysis II

In this section, I test the rest of the implications from the model. Namely, I test Hypotheses 5.1, 5.2, 5.4, and 5.5, which relate various factors to the likelihood that primary senders choose to sanction multilaterally rather than unilaterally. Consistent with the theoretical model, the unit of analysis is a sanction-case. Because I am interested in analyzing the primary senders' choices between multilateral and unilat-

eral sanctions, the dependent variable **Multilateral** specifies whether or not a primary sender pursued multilateral sanctions in a given case. To code this dichotomous variable, I draw information from the TIES data set. I code a case as multilateral if TIES reports that the case involved more than one sender or an international institution. The data set includes 63 multilateral sanction cases and 407 unilateral sanction cases. Here, I employ a Probit model to analyze the primary senders' design choices.

### **5.5.1 Independent Variables**

The hypotheses specify how characteristics of primary sender-target relationships or characteristics of primary senders influence primary senders' design choices. Testing them requires an identification of which state is the primary sender in each sanction case. I draw this information from the TIES data set, which defines a primary sender as a "state that proposes sanctions, initiates the threat, or is responsible for mobilizing other states to initiate sanctions." Once primary senders are identified, independent variables can be constructed. Below, I introduce how these variables are operationalized and measured.

### **Value of Trade**

Hypothesis 5.1 states that as the target's valuation of the primary sender-target trade relationship increases, multilateral sanctions are less likely to be chosen. To measure

the extent to which the target values her trade relationship with the primary sender, I code **Trade Dependence**. The logic behind the variable lies in the argument that targets increasingly value trade with senders as the volume of that trade increases. This variable is measured as the proportion of the volume of sender-target trade over the target's GDP from the year before sanctions started. To construct this variable, data on countries' GDP and bilateral trade volumes are drawn from Gleditsch (2002). *Ceteris paribus*, higher target trade dependence should decrease the chance that the primary sender chooses sanctioning multilaterally.

### **Difficulty in Enforcing Unilateral Sanctions**

Hypothesis 5.2 suggests that when it is more difficult to enforce his unilateral sanctions, the primary sender is more likely to pursue sanctioning multilaterally. To measure the extent to which the primary sender has difficulty enforcing his unilateral sanctions, I focus on the variable **Distance**, which is the natural log of the capital-to-capital distance between the sender and target. As argued in Chapter 4, this variable relies on the claim in the trade literature that greater distance between countries means fewer firms engage in trade between those countries (e.g. Melitz 2003, Bernard et al. 2007, Helpman, Melitz & Rubinstein 2008). As fewer firms are involved in trade between the primary sender and the target, it should be

easier for the primary sender to monitor these firms' behavior. Therefore, *ceteris paribus*, a shorter primary sender-target distance should increase the difficulty of enforcing unilateral sanctions, which in turn increases the chance that the primary sender chooses multilateral sanctions over unilateral ones.

### **Primary Sender's Wealth**

According to Hypothesis 5.4, wealthier states are more likely to pursue multilateral sanctions. To test this hypothesis, I prepared a variable **Primary Sender's GDP**, which is the natural log of the primary sender's GDP. To construct this variable, data on countries' GDP are drawn from Gleditsch (2002). We expect that, *ceteris paribus*, the wealthier the primary sender, the more likely he imposes sanctions multilaterally.

### **Effective Bureaucracy**

Hypothesis 5.5 states that a primary sender with an effective bureaucracy is more likely to sanction multilaterally. I prepared an independent variable, **Effective Bureaucracy**, to test this hypothesis. I use an aggregate measure of bureaucratic quality from the International Country Risk Guide data set, which measures effectiveness on a scale from 1 to 4 on the basis of expert surveys (4 means a good quality and 1 poor quality). This bureaucratic quality variable measures the strength and expertise of bureaucrats and their professionalism and efficiency in each country. The use of

ICRG data may not be ideal because the information in the data is not specific to the enforcement agencies for sanction policies. However, given that many bureaucratic agencies often get involved in sanctions enforcement and also most countries do not even have specific agencies for enforcing sanctions, I believe the data from ICRG largely capture the sender's ability to enforce sanctions. *Ceteris paribus*, **Effective Bureaucracy** should increase the chance that the primary sender chooses to sanction multilaterally rather than unilaterally.

## 5.6 Empirical Results II

The empirical results regarding Hypotheses 5.1, 5.2, 5.4, and 5.5 are summarized in Figure 5.2. The results provide strong support for the hypotheses. Concerning Hypothesis 5.1, the coefficient on the **Trade Dependence** is negative as predicted and statistically significant. This suggests that when the target values her trade with the primary sender, multilateral sanctions are less likely to be imposed. This evidence supports the theoretical result that primary senders do not pursue multilateralism when unilateral sanctions are enough to change targets' policy behavior.

Concerning Hypothesis 5.2, the coefficient on the **Distance** variable is negative and statistically significant, which is consistent with the expectation. This result implies that as the enforcement of unilateral sanctions become difficult, the primary

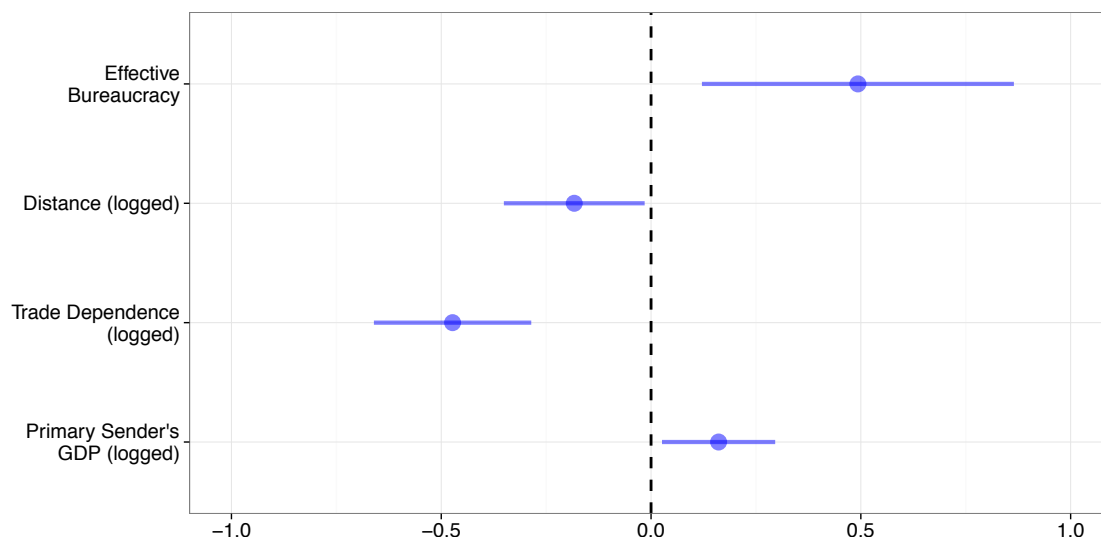


Figure 5.2 : **Coefficients from Probit Regression of Primary Sender's Design Choice:** The graph shows the regression coefficients from the estimated model ( $N = 533$ ). Circles show the point estimates, and horizontal line segments associated with circles show the 95% confidence intervals. The coefficient on the intercept is omitted ( $\alpha = -5.22$ ,  $s.d. = 1.52$ ).

sender is more likely to resort to multilateral sanctions.

The coefficient on the **Primary Sender's GDP** variable is positive and statistically significant as predicted. This finding supports Hypothesis 5.4 and suggests that as the primary sender becomes wealthier, he is more likely to sanction multilaterally rather than unilaterally. Because wealthy states can provide concessions big enough to secure cooperation from other states and also can help enforce multilateral sanctions, they are more likely to pursue building sanctioning coalitions.



Finally, the coefficient on the **Effective Bureaucracy** is positive and statistically related to the likelihood of primary senders choosing multilateral sanctions. This finding implies that states with effective bureaucracies are able to build and maintain effective multilateral coalitions by helping other states enforce their sanctions, which increases the chance that they pursue sanctioning multilaterally.

Examining the substantive effects of the variables not only confirms the conclusions that have been drawn so far but also demonstrates how important these factors are in determining primary senders' design choices. The four panels in Figure 5.3 represent the effects of each independent variable on the predicted probability of the primary senders' choices. The top-left panel suggests that having an effective bureaucracy increases the baseline probability of multilateral sanctions by about 10%, on average. This effect is quite strong, as are the effects of the other variables in this figure. In the top-right panel, the effect of distance is a steady decrease in the probability of interest. In the bottom-left panel, the effect of the trade dependence decreases rapidly in the range between 0% and 20% from 30% to 0%, which is a strong effect. In the bottom-right panel, the effect of primary senders' wealth increases from 2.5% to 20%, which is again quite significant.

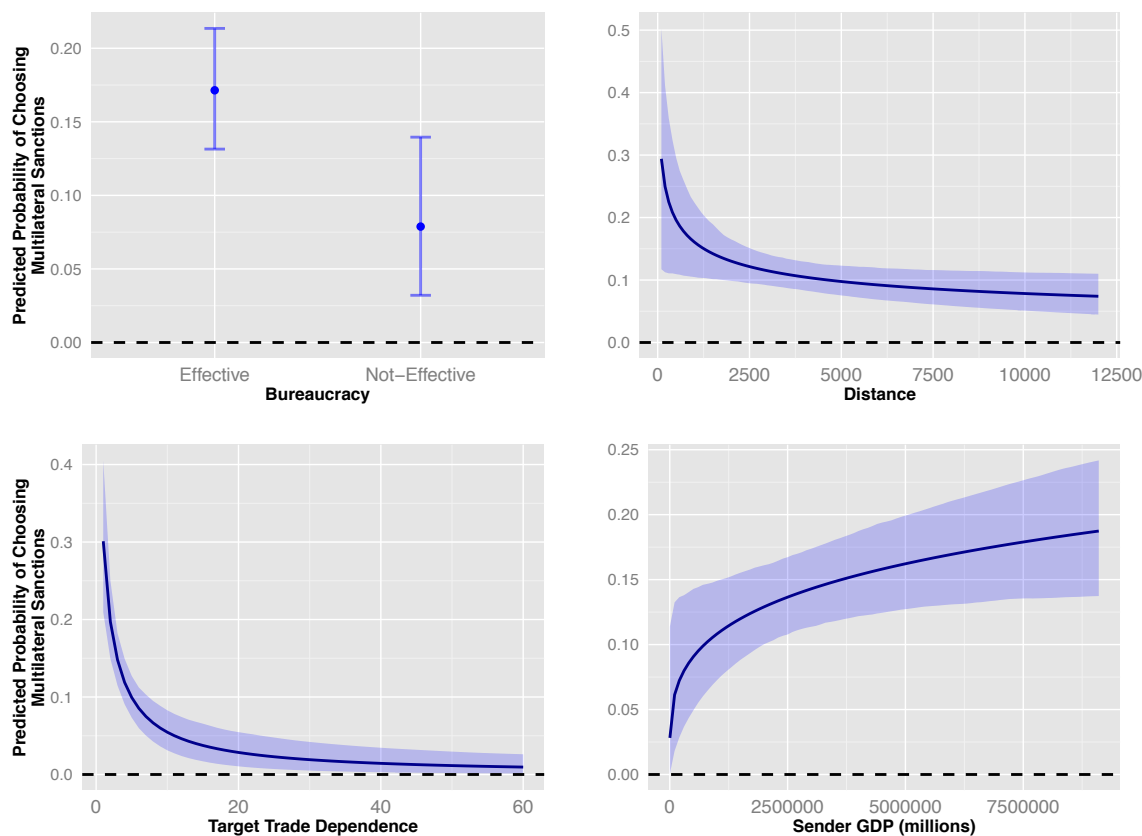


Figure 5.3 : **Predicted Substantive Effects on the Probability that Primary Sender Chooses Multilateral Sanctions:** Each panel presents the 95% confidence band of the effect of each respective variable on the probability that a threat succeeds. The 95% confidence interval at each incremental step is based on 1,000 simulations. All other variables are held at their medians.

## 5.7 Conclusion

In this chapter, I have analyzed states' choices between unilateral and multilateral sanctions from an enforcement perspective. Two primary conclusions can be drawn.

First, primary senders' design choices are influenced by the extent to which they are able to enforce unilateral as well as multilateral sanctions. When unilateral sanctions are expected to be enforceable and costly enough for targets to give in, primary senders choose unilateral sanctions. If not, they consider the option of multilateral sanctions; but, it is difficult and costly to get other states to cooperate and enforce their sanction policies. Thus, primary senders who have the capacity to help enforce other states' domestic enforcement activities are the ones who are expected to pursue multilateral sanctions. Because enforcing unilateral and multilateral sanctions require similar sets of skills and expertise, these two results imply that states with strong enforcement capability are those that can effectively use economic sanctions as a foreign policy tool.

The second implication of the theory has to do with the effectiveness of multilateral sanctions. The sender's design choices posited here suggest a kind of selection effect, which has not been addressed in the literature. Recent evidence suggests that multilateral sanctions are indeed more effective than unilateral sanctions. The traditional interpretation of this evidence is that multilateral sanctions are more effective because they impose greater costs on the target (Miers & Morgan 2002, Bapat & Morgan 2009, McLean & Whang 2010). While my argument is not inconsistent with this line of reasoning, my theory also suggests that senders strategically *choose* to

sanction multilaterally only when they expect multilateral sanctions to work and when they are capable of maintaining effective coalitions. Given that it is costlier to sanction multilaterally than unilaterally, senders must be careful when choosing between the two.

## Chapter 6

### Conclusion

This chapter summarizes what has been learned about economic sanctions from the enforcement perspective. It first reviews the theoretical arguments and summarizes their predictions and performance against the empirical record. These conclusions have ramifications for the study and practice of economic sanction policies. This chapter concludes by a brief discussion of the limitations of this study and where future works should go.

This study started with the premise that firms, not states, carry out sanction policies. I argued that firms' decisions to evade sanction policies not only undermine the effectiveness of sanctions, but also have an important influence on states' decisions and the outcomes of sanction processes. While existing studies have focused on the importance of sender-target trade as a crucial determinant of sanctions effectiveness, I have argued that sanctions may not lead to a disruption of the sender-target trade relationship because firms may or may not comply with sanction policies. This is why the model introduced here shows firms' compliance with sanction policies is also a necessary condition for sanctions success, in addition to the importance of trade

relationships. Firms' compliance behavior also has an important, and surprising, effect on the senders' decisions. Senders are more likely to impose sanctions when they anticipate firms' *non*-compliance. This is because, once threats fail and the chance of sanctions success is small, senders are more concerned about saving their reputations without losing trade. They can achieve these goals simultaneously when firms actually evade sanction policies and continue trading. The empirical evidence presented in Chapters 3 and 4 provide fairly strong support for these novel theoretical results.

This study investigates another important decision that senders make in sanction episodes, namely the decision to impose sanctions multilaterally or unilaterally. The main theory presented in Chapter 2 was primarily concerned with states' decisions in unilateral sanctions cases, but senders can possibly pursue imposing sanctions multilaterally. The expectations about the enforcement of sanctions matter for the sender's decision to go forward unilaterally or multilaterally. In particular, when the enforcement of unilateral sanctions is anticipated to be difficult, senders are more likely to choose multilateral sanctions. However, imposing multilateral sanctions is also expensive and difficult because their enforcement relies on other states' willingness to participate and their enforcement capabilities. When states have enough resources and the bureaucratic capability to help other states enforce their sanctions,

they are more likely pursue a multilateral path. The empirical evidence in Chapter 5 buttresses these theoretical results.

In total, this study has highlighted the importance of incorporating expectations about enforcement into a full understanding of the sanctions processes and including firms as an additional, key actor in international interactions between states. The clear implication here is that states' ability to influence firms' decisions at home as well as abroad is a crucial determinant of whether they impose sanctions, how they design sanction policies, as well as sanctions effectiveness.

So far, I have summarized the main results that emerged from this work. Yet, how successful has this study been in filling the gap identified in the existing literature? How has the knowledge generated in this study advanced the existing knowledge of economic sanctions?

In Chapter 1, I argued that the recent approaches in the literature to look more deeply into domestic processes behind sanction policy making are promising, but they fall short in two areas. First, these recent theories have seldom been subjected to empirical scrutiny. Second, these new perspectives have not shed light on how domestic concerns about sanction policies influence international interactions between states. To address these two issues simultaneously, this study has incorporated firms as a key actor in the strategic environment between a sender and target and explored

the resulting testable implications for sanctions decisions.

More specifically, building on a bargaining approach utilized by prior work, this study has incorporated enforcement as a key part of sanction processes and offered a more complete and logically consistent theory. The model explicitly specified and convincingly demonstrated how the enforcement of sanctions and firms' compliance behavior are linked to states' decisions and the outcomes of sanctions. The theoretical results have been substantiated empirically with quantitative data.

This study has generated several novel insights which have not been appreciated before. At first glance, it appears that factors such as sanctioning states' bureaucratic quality or ownership of firms are unrelated to economic sanctions. By including the enforcement of sanctions as a part of sanction processes, the theoretical perspective offers ways to connect these seemingly unrelated factors to various aspects of sanctions, sometimes in a surprising way. A key finding has been that states' ability to enforce sanctions crucially increases the effectiveness of sanctions, but counter-intuitively decreases the likelihood that they impose sanctions at the same time. The theory provides a logically consistent explanation for these apparently paradoxical findings. Also, the theory explains the means by which the characteristics of firms and the sender-target trade relationship are related to different outcomes of sanctions. The study therefore offers a novel and empirically corroborated theoret-



ical perspective. Even purely empirically, the project also makes a contribution by discovering several new determinants of sanction outcomes.

The conclusions from this study directly speak to policy debates about the enforcement of sanction policies. Policy makers as well as scholars often suggest that a lack of effective enforcement is an explanation for why sanctions often fail (e.g. de Fiedorowicz 1936, Paul & Akhtar 2009). Indeed, states do not appear to be fully committed to enforcing sanctions. Most countries, with the exception of the United States, do not have specific enforcement agencies for economic sanctions. Even in the United States, OFAC does not appear to be aggressive about going after transgressors of sanction policies. For example, they reported only twenty-one and sixteen violation cases in 2011 and 2012.<sup>1</sup> These numbers are strikingly low, given the agency is enforcing sanctions against sixteen different targets and more than 6,000 corporations and individuals. These observations are consistent with some new empirical evidence provided by Early (2012), suggesting that firms often evade sanction policies.

Should this be taken as an evidence that governments do not take sanctions seriously and thus sanctions fail? But if this is true, why would governments continue imposing sanctions? The theory presented in this study provides a fresh look at

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<sup>1</sup> <http://www.treasury.gov/resource-center/sanctions/CivPen/Pages/2012.aspx>

this puzzling behavior of states. Observationally, states do not appear to enforce sanctions vigorously because senders impose sanctions when they expect firms' non-compliance. Sender states do this because they want to save their reputations without losing trade with targets.

However, the theory suggests that we should not be pessimistic about the usefulness and effectiveness of economic sanctions just because they do not seem to be enforced. Even though senders do not appear to be serious about enforcement, findings in this study show that sanctions can change a target's policy when senders have the ability to enforce sanctions.

As it stands, the project outlined here has many shortcomings and limitations that need to be addressed; however, it clearly provides some insights and directions for future research. First, the most obvious direction is to derive more empirical implications from the present theory and test them against data. There are several comparative statics predictions from the model that have not been explored in detail here. For example, exploring firms' cost of evading sanctions, such as extra costs for transshipping goods through third-party states, can lead to a host of factors that can potentially influence outcomes of sanctions. Such an exercise would not only generate more insights about the conditions under which sanctions are imposed and succeed, but also point to where the theory needs to be modified.

The second venue for future research explores another channel through which firms can possibly influence states' decisions in sanction episodes. This study has focused on firms' decisions to comply with sanction policies, but they can also lobby politicians against imposing sanctions. Rather than simply lobbying against the impositions of sanctions, firms may also attempt to influence the design of sanctions so that they will not be affected. To what extent do firms' lobbying activities impact sanction decisions and effectiveness? If their lobbying activities make a difference, at which stage in the sanctions process do they exert influence? What are the characteristics of firms and industries that are important in determining the success of firms' lobbying efforts? Answering these questions requires a new theoretical model and testing such a model calls for new information about the design of sanctions, such as which specific industries are targeted by sanction policies.

Third, it is also important to acknowledge that this study has focused only on trade sanctions and set aside possible implementation problems in other types of economic sanctions, such as termination of aid transfers and travel bans. At first glance, such an analysis may look simple. For example, aid terminations may be easy for sanctioning governments to implement because terminating aid transfers does not have to be carried out by subnational actors. However, aid is often given to other states in exchange for some policy concessions (Bueno de Mesquita &

Smith 2009, Heinrich N.d.), which should make it more difficult to terminate without policy implications. Furthermore, I also did not address a more complicated problem regarding a state's choice between different forms of sanctions. Investigations into these questions would certainly enrich the current understanding of economic sanctions.

This study also provides a fruitful direction for research beyond the sanctions literature. Broadly speaking, this study showcases the importance of studying the implementation aspect of foreign policy instruments. By focusing on the very actor who carries out sanction policies, the theory presented here suggests that concerns about policy implementation have an important influence on policy effectiveness as well as states' decisions to use and design such policies. Investigations into the implementation of other foreign policy instruments would similarly be fruitful. For example, foreign aid policies are often carried out by non-state actors such as non-governmental organizations (NGOs). In light of recent findings that the practice of giving foreign aid is a belligerent policy tool (e.g. Bueno de Mesquita & Smith 2009), it is likely that the preferences of NGOs are not the same as those of donor governments. Understanding how NGOs' inclusion in the aid process influences states' decisions to provide foreign aid and how those decisions influence NGOs would be an interesting question for IR scholarship as well as an important contribution to

the aid literature and to the evaluation of comparative foreign policy tools.

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